

# THE IRON AGE

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## Steel Works Experience with the Short Day

Wage Adjustments as Worked Out at Various Plants—  
The Question of Spare-Time Work Under the New  
Regime—Six-Day and Seven-Day Week

BY BRADLEY STOUGHTON

IF there is one factor which stands out more clearly than any other in connection with successful changing from the 12-hour day in the iron and steel industry, it is that it must be done with the cheerful cooperation of the 12-hour workers. No other method has resulted in satisfaction, or accomplished a permanent system of 8-hour or 10-hour shift. It is my belief, after studying the results of change at the prominent American works where it has been successful, that the greatest degree of mutual satisfaction is obtained when both sides—employer and employee, payer of wages and recipient—make concessions to accomplish the desired result. Seldom does anyone value highly what he gets for nothing, and more seldom still does he make a good use of it.

### Companies with Three-Shift Experience

Now that the 12-hour day is to be abandoned in the steel industry it is essential that both sides make the best use possible of the advantages which can be had from the changed conditions. This is the history and present experience of: Colorado Fuel & Iron Co., American Rolling Mill Co., Commonwealth Steel Co., National Enameling & Stamping Co., Wisconsin Steel Co., Trumbull Steel Co., Duquesne Steel Foundry, and others. It is also the lesson to be learned from some of our American

steel plants which abandoned the 12-hour day and then returned to it, and from experiences in Europe. If our un-Americanized foreign workers prefer to work twelve hours out of the twenty-four for the sake of extra wages, they should be forced by their fellow workers—and not by the management—to live more in accordance with the best American standards and to employ their leisure time for the betterment of themselves, their families and the community. It seems to be difficult for the inexperienced to use freedom intelligently, just as is often the case with young persons and "newly-rich" in the use of money.

### Use of the Time Gained

The intelligent use of leisure time is important for the success of the shorter day. In the case of steel workers it seems to depend largely on the amount of responsibility to which the worker has been accustomed previously, as for example, in the matter of participation in government. This is strongly brought out in the Report of the International Labor Office in Geneva, Switzerland, on the change abroad. Thus, in England (see especially pages 11 to 16 of the report) the energy and output of the workers have increased with the shorter hours; but in Austria, Poland, Czechoslovakia and Spain there are abuses which make the results

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**T**HIS is the first of a series of articles Mr. Stoughton will present to readers of THE IRON AGE. It deals especially with the experience of a number of steel companies which have already abandoned, in all or in some of their departments, the 12-hour day. The second and third articles, which will be published in our next two issues, will deal with plans now under way in Central Western steel centers for the introduction of the shorter day in pursuance of the action recently taken by the directors of the American Iron and Steel Institute. They will be based on new investigations Mr. Stoughton has just made and on conferences with works managers at important plants.

These interviews have added much to the data Mr. Stoughton has presented heretofore as the author of Part 3 of the volume on the "Twelve-Hour Shift in Industry," published by the committee of the Federated American Engineering Societies, which dealt with work periods in continuous industry. What he will present in the second and third articles may be expected to contribute in a definite way to the solution of the problems with which all steel plant managers are now dealing.

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worse. In general, Germany is very disappointing, but this example scarcely supports the argument, because other conditions here outweigh the effect of shorter hours. On page 16, the report summarizes the results:

Timekeeping appears to have improved in Belgium, Great Britain, Italy and Japan, but other replies do not indicate any change. The longer leisure seems to be spent at home or in gardening. Men often take up supplementary work either in their principal or some other occupation. In some cases, indeed, workers are said to obtain less rest under the three-shift system, for the reason that they now overtire themselves by supplementary work. Keener interest is being taken in trade unionism and politics. A number of employers aver that there has been an increase of alcoholism and other bad habits, especially among the younger workers.

#### Taking Up Spare-Time Work

At the Colorado Fuel & Iron Co., where 53 per cent of the workers are American, the men were changed from 12-hour shifts to 8-hour shifts in November, 1918, at their own request. As the result of negotiation they accepted a reduction of  $26\frac{2}{3}$  per cent in the daily wage (i.e., an increase of 10 per cent in hourly rate). Nevertheless, there has been no disposition to engage in outside labor to eke out the income. At three other American plants, where the proportion of foreign labor is greater, the change from the 12-hour to the 8-hour shift was followed by many instances of outside work, such as in garages and repair shops, milk and newspaper deliveries, working in stores, cutting lawns and caring for furnaces for hire, and other part-time work, which used up the spare energy and efficiency of the workers. This is to be distinguished from home work in gardens, which brings recreation and is not fatiguing if indulged in moderately. This type of spare-time work is encouraged in all the three-shift plants.

The method of dealing with the other type of spare-time laboring was different in the three plants mentioned: At one plant, which is dominated by trade union influence, a certain amount of outside work in garages has to be endured, depending upon the attitude of the majority of the men. It is observed here, however, that most of the men put in their free time in gardening at their homes in the country surrounding the plants. No other misuse of time is noted and such work as is done has no great effect on the energy of the millwrights. The second plant in question is governed by a works council, and the disposition to take up outside work was corrected by the workmen themselves, through the council, as soon as the matter was called to its attention. At the third plant the management carried on negotiations with the men which put a stop to the practice. These three plants differ from the Colorado Fuel & Iron Co. in that they are situated in large Middle-Western centers of industry and draw their laborers largely from classes of foreigners. Partly through fear of losing the 8-hour day, and partly out of a spirit of fairness, the men were made to see the desirability of eliminating the abuse of leisure time. Mutual trust and good-will naturally had to precede the good understanding and cooperation which alone could control the situation.

#### Methods of Making the Change

Instances of actual experience in negotiations by which the 12-hour day was eliminated are undoubtedly interesting and valuable in the present situation. Some may well be cited here: The Commonwealth Steel Co. is a small open-hearth casting plant. It changed the continuous operations from 2 to 3 shifts some 12 years ago. The molding work was not continuous. An attempt was made to operate it on three 8-hour shifts, but it has been found more efficient to work two 8-hour shifts, allowing time between for shaking out molds, cleaning up, etc. This experience is interesting in relation to what occurs with two 10-hour rolling mill shifts, which have in at least two cases disclosed

"bottle-necks" in the general scheme of plant operation and resulted in greatly increased production over the same mills operated continuously for 24 hours.

At the Commonwealth plant no demand had been made for abandoning 12-hour shifts, but the suggestion originated with the manager, Major Robert A. Bull. The proposal met with enough favor from the men to enable an agreement to be reached whereby both sides made wage concessions resulting a little better than 50-50 in favor of the employer. That is to say, hours were decreased by 33 per cent and wages were increased from 16 to 22 per cent. Major Bull has since expressed himself to me as convinced that a 50-50 division of wages would result in actual saving to the employer, due to better operation. He bases this opinion on his experience at Commonwealth and at two similar plants subsequently changed over under his direction. Detailed studies and research in the results of the work were published in the Transactions of the American Foundrymen's Association, 1912, and in *Engineering Magazine*, January, 1913. This figure might therefore be used as a starting point of negotiations in similar plants.

#### Colorado Experience

At the Colorado Fuel & Iron Co. the change to three shifts came in response to a request from the men, instead of the suggestion of a trusted and popular general manager, as at Commonwealth. The Pueblo plant employs more than 6000 men and operates blast furnaces, Bessemer converters, open-hearth furnaces, rolling mills, wire mills, etc. The relations between men and management had been cooperative previously. Wage controversies were avoided by an agreement whereby the same wages were paid as in the East. In 1918, when Eastern plants adopted the basic 8-hour day, which means 14 hours' pay for 12 hours' work, or an increase of  $16\frac{2}{3}$  per cent, the men asked that, instead of receiving a "basic 8-hour day" at  $16\frac{2}{3}$  per cent increase, they receive an actual 8-hour day at 10 per cent increase. All departments were then working 12 hours per day. On Nov. 1, 1918, all departments changed over to 8 hours per day, and so remain at the present time. The change was made all at once and without occasioning any noteworthy difficulties. Writing  $3\frac{1}{2}$  years later—that is, June, 1922—the management avers that there is and has been no dissatisfaction with the plan. As a basis for negotiations at other places it is interesting to note that the increase of labor efficiency after the change was, on the average, at least 10 per cent, so that the labor cost of production per ton was not increased. The decrease varies greatly in different departments, however.

In the same connection it should be noted that the readiness of the Colorado men to accept an 8-hour day with a much lower daily wage is not necessarily a criterion of what would occur in our eastern States, because the 8-hour sentiment is far stronger in Colorado than it is in the East, and because the proportion of American laborers is much greater—perhaps twice as great. If the men had accepted the "basic 8-hour day," with time-and-a-half for every hour over 8 hours, and had continued to work 12 hours per day, their daily wages would have been 59 per cent greater than it was on the actual 8-hour day with a 10 per cent increase. In other words, they accepted a 40 per cent reduction in daily wage to get the 8-hour day, instead of a  $16\frac{2}{3}$  increase, with longer hours. It is too much to expect that men in Eastern industrial centers would be equally complaisant.

#### The Harvester Company's Plan

The Wisconsin Steel Works is a subsidiary of the International Harvester Co., which is operated under the "Harvester Industrial Council," in which employees



and management have equal representation "in the consideration of all questions of policy relating to working conditions, health, safety, hours of labor, wages, recreation, education, and other similar matters of mutual interest." It was extremely simple therefore, to negotiate in a friendly way the question of changing from two to three shifts. The Industrial Council was established on March 10, 1919, and all continuous departments of the works were on 8-hour shifts by May, 1919. The change was rendered easier by the fact that the Bessemer and blooming mill had been on 8-hour shifts for five years.

In the matter of wages, employer and employee split on the 50-50 basis, just as the American Iron and Steel Institute directors now recommend shall be done in the general movement away from the 12-hour day. The men who had been working 12 hours received 10 hours pay for 8 hours work; those who had been working 10-hour shifts received 9 hours pay for 8 hours work. The so-called "8-hour basis" continued, viz: Time worked over 8 hours per day received pay at  $1\frac{1}{2}$  the regular rate. The men work 20 turns in 21 days, according to the usual schedule on three-shift work, to be discussed later. For Sunday work, even on regular schedule, and for five of the legal holidays per year, time-and-a-half of the hourly rate is paid.

It happened that the change to the 8-hour day came at the same time as an increase of 10 per cent in the wages at neighboring plants, so that the men accepted a 25 per cent decrease in daily wage, with less hours of work, instead of a 10 per cent increase. Some departments work only two shifts of 8 hours each; for example, the ore unloaders at the blast furnaces. At first, only the men on continuous processes were put on 8-hour shifts, but later, at the desire of the men as expressed by their representatives on the council, all departments went on the 8-hour day.

#### At Sheet and Tin Plate Plants

It is well known that sheet and tin plate mills are pretty thoroughly unionized in this country, and are on the three-shift system. Two prominent producers of sheets and tin plates have also put other departments on the actual 8-hour day. Each of them is operating without dissatisfaction, and each serves as a different example of the manner of making the change: The National Enameling & Stamping Co. employs only union labor and deals with its men through the unions. By annual negotiation the number of 8-hour men has been pretty steadily increased. In one case the men wanted to go back to 12-hour work in order to make more money, and the union would not let them. Millwrights and rolling mill labor are on 12-hour duty, because they have so much idle time per day. Day labor works two shifts of 10 hours each. Eight years ago the open-hearth department changed from two to three shifts. The daily wage adjustment made with the union involved the men giving up 75 per cent and the company 25 per cent of the difference; in other words, the men worked two-thirds the number of hours at a  $12\frac{1}{2}$  per cent increase in wage per hour.

The universal mill and plate mill departments have also been put on 8 hours. Each time a change was made the company started off by adding 50 per cent to the number of men employed, but later was able to reduce them in many cases, such as spell hands on rolling mills, extra crane men, etc. In other cases they did not later decrease the number of men, but increased the production per man per hour. This was especially noticeable in cases where the 12-hour day was reduced to a 10-hour day.

#### Trumbull Steel Co.

The Trumbull Steel Co. also operates sheet and tin plate mills, and it has all departments of its works

except its blast furnace on two shifts. In making the change it negotiated directly with its men and it adopted the technical principle of installing all possible labor-saving devices to carry the peak loads. As pointed out on pages 266 to 278 of "The Twelve Hour Shift in Industry" this mechanical handling of the peak loads is the most effective way of benefiting from the advantage of 8-hour human work versus 12-hour work—or, rather, 8-hour shifts versus 12-hour shifts, because the men usually cannot work for the entire shift, be it 8 or 12 hours long. A second cardinal principle of this company is that the equipment must be put in the best of condition before the change is made, in order to take advantage of the increased efficiency which comes with three shifts instead of two.

#### American Rolling Mill Co.

A company whose operation of the 8-hour day has attracted much attention is the American Rolling Mill Co. This company attacks the problem of the change in a characteristic way, viz: as a research investigation. The study extended over seven months before the blooming and bar mills were put on three shifts, in February, 1920. The result was an increase in the labor force, not of 50 per cent, but only 11 per cent. The men were paid a slightly higher hourly rate than they had received for 12 hours work, but a bonus was added to increase their daily wage to the same as before, provided they increased their efficiency as much as the plant studies had indicated was possible. In point of fact, the average increase in production per man over a period of months was 15 per cent.

In April, 1920, the open-hearth department was put on three shifts, with a 15 per cent increase in the labor force. In this department the increase in productivity per man has been less than the estimate, and labor costs per ton have increased also. For time over 8 hours the company pays the regular rate; it believes that added rate of compensation for overtime defeats some of the objects and advantages of the 8-hour day. Another principle of the company is to change gradually and only after full study of the conditions. It is to be observed, however, that this company differs from most companies in being trained to practice and to be guided by research. Whether the same practice would be successful with the generality of American companies is another question. In any event, it is obvious that this is a method of attack which demands special research in each plant and for each department. Apparently specially trained engineers would also be required.

#### In the Youngstown District

As noted in THE IRON AGE of Aug. 2, 1923, some of the higher-priced men in the Youngstown district have this summer been changed at their own request from 12 to 8 hour per day, without advance in hourly rate or tonnage basis. The article mentions especially men at the blooming mill of the Republic plant, and refers not only to rollers, but also cranimen, pitmen, etc. They made the request upon learning that it had become effective in some departments of the Youngstown Sheet & Tube Co. The men are mostly Americans. They made the change knowing that, unless their productivity per hour was increased, they would lose a part of their previous daily earnings.

#### Modifying Six-Day Week

In connection with the change from the 12-hour day the question is certain to arise in many instances of the abolition of the 7-day week, which has become synonymous in the public mind with the long hours of the steel industry. If the 8-hour day and the 6-day week become effective it will undoubtedly involve an

increase in the cost of steel per ton higher than the estimates of \$3 to \$4 per ton so far predicted. It will also involve the so-called "floating gang," which takes the place of the men one day per week, but not always on Sunday. It will involve a reduction of hours from 84 per week to 48 per week, which, with the inevitable periods of enforced resting time which must continue as at present for a while at least, means that the men cannot really accomplish a "man's work." This would

Table I—Week-End Change of Shifts on Three-Shift System

|      | First Week |     |     | Second Week |     |     | Third Week |     |     | First Week |     |     |
|------|------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
|      | 12N        | 8am | 4pm | 12N         | 8am | 4pm | 12N        | 8am | 4pm | 12N        | 8am | 4pm |
| Mon. | 1          | 2   | 3   |             |     |     |            |     |     |            |     |     |
| Tu.  | 1          | 2   | 3   |             |     |     |            |     |     |            |     |     |
| Wed. | 1          | 2   | 3   |             |     |     |            |     |     |            |     |     |
| Th.  | 1          | 2   | 3   |             |     |     |            |     |     |            |     |     |
| Fri. | 1          | 2   | 3   |             |     |     |            |     |     |            |     |     |
| Sat. | 1          | 2   | 2   |             |     |     |            |     |     |            |     |     |
| Sun. | 3          | 3   | 1   |             |     |     |            |     |     |            |     |     |
| Mon. |            |     |     | 2           | 3   | 1   |            |     |     |            |     |     |
| Tu.  |            |     |     | 2           | 3   | 1   |            |     |     |            |     |     |
| Wed. |            |     |     | 2           | 3   | 1   |            |     |     |            |     |     |
| Th.  |            |     |     | 2           | 3   | 1   |            |     |     |            |     |     |
| Fri. |            |     |     | 2           | 3   | 1   |            |     |     |            |     |     |
| Sat. |            |     |     | 2           | 3   | 3   |            |     |     |            |     |     |
| Sun. |            |     |     | 1           | 1   | 2   |            |     |     |            |     |     |
| Mon. |            |     |     |             |     |     | 3          | 1   | 2   |            |     |     |
| Tu.  |            |     |     |             |     |     | 3          | 1   | 2   |            |     |     |
| Wed. |            |     |     |             |     |     | 3          | 1   | 2   |            |     |     |
| Th.  |            |     |     |             |     |     | 3          | 1   | 2   |            |     |     |
| Fri. |            |     |     |             |     |     | 3          | 1   | 2   |            |     |     |
| Sat. |            |     |     |             |     |     | 3          | 1   | 1   |            |     |     |
| Sun. |            |     |     |             |     |     | 2          | 2   | 3   |            |     |     |
| Mon. |            |     |     |             |     |     |            |     |     | 1          | 2   | 3   |
| Tu.  |            |     |     |             |     |     |            |     |     | 1          | 2   | 3   |

be a condition undesirable from the standpoint of both sides, as well as the public.

However, it is possible to so arrange the three-shift week-end change of turn to give each man a 56-hour week and from 4 to 12 daylight hours every Sunday, with possibilities of church, family life, etc. Several means of accomplishing this are published in the Report of the International Labor Office, Geneva, Switzerland, September, 1922. A sample method is also indicated in the accompanying Table I. It is sometimes varied so that crew No. 3 (example: first week) works until 1 o'clock, instead of 4 o'clock, thus dividing the Sunday better with crew No. 1. Other variations are simply made and are often suggested by the men themselves.

### Steel Treaters' Convention and Exhibition

The fifth annual convention of the American Society for Steel Treating and the International Steel Exposition, held under the auspices of the society, will take place in Motor Square Garden, Pittsburgh, during the week of Oct. 8. Papers have been secured from Japan, England, France and Germany, and these combined with the large number of papers to be presented by some of America's foremost metallurgical engineers, all combine to make this year's technical sessions the strongest that have ever been held by this society. An increase of 25 per cent more space has been taken for the exhibit at Pittsburgh than was used last year at Detroit and the 50,000 sq. ft. of exhibit space will be given over to a display of metals, metalworking machinery, appliances and equipment for the steel treating department. The large majority plan to have their exhibits in operation.

The American Steam Gage & Valve Mfg. Co., Boston, has sold its branch plant at 3 Grand Street Court, Worcester, Mass., to the American Schaeffer & Bundenberg Corporation, New York, for approximately \$100,000. The new owner has an interest in the Schaeffer & Bundenberg Mfg. Co. Brooklyn, maker of gages and valves, which has been affiliated with the American company. The plant has been idle for about two years. It originally was built by the Critchley Machine Screw Co. The new owners plan to begin operations at an early date.

### Iron and Steel Exposition at Buffalo

Reservations for space in the Broadway Auditorium, Buffalo, Sept. 24 to 28, are reported by the Association of Iron and Steel Electrical Engineers to have been made by more than 100 manufacturers of steel mill apparatus. In the list which follows (F) indicates an exhibit in the Foundry Show; (FI) indicates an exhibit in both shows. There is to be a complete steel foundry in operation, showing process of preparing hot metal and transmuting it into finished castings.

#### List of Demonstrators for Steel Mill and Foundry Show

|   |   |
|---|---|
| Aero Pulverizer Co.                     | Martindale Electric Co.                     |
| Alliance Machine Co.                    | William G. Merowit                          |
| Allis Chalmers Mfg. Co.                 | Mercury Mfg. Co.                            |
| American Heat Economy Bureau            | Mutual Electric & Machine Co.               |
| Andresen Co.                            | Mutual Foundry & Machine Co.                |
| Appleton Electric Co.                   | National Carbon Co.                         |
| Atchison Graphite Co. (F)               | National Electric Mfg. Co.                  |
| Automatic Reclosing Circuit Breaker Co. | National Engineering Co. (F)                |
| American Arch Co.                       | Nichols Lintern Co.                         |
| Bacharach Industrial Instrument Co.     | Norma Co. of America                        |
| Baker R & L Co.                         | R. D. Nuttall Co.                           |
| Bartlett Hayward Co.                    | Northern Equipment Co.                      |
| R. H. Beaumont Co.                      | Ohio Electric & Controller Co.              |
| Benjamin Electric Mfg. Co.              | Osborne Mfg. Co. (F)                        |
| Bussmann Mfg. Co.                       | Packard Electric Co.                        |
| Boxill Bruell Carbon Brush Co.          | Pangborn Corporation (F)                    |
| Chapman Valve Mfg. Co.                  | Pittsburgh Electric Furnace Corporation (F) |
| Chicago Fuse Mfg. Co.                   | Pittsburgh Electric & Machine Works         |
| Chicago Pneumatic Tool Co. (FI)         | Pittsburgh Transformer Co. (FI)             |
| Cleveland Crane & Engineering Co. (F)   | Precision Grinding Co. (F)                  |
| Cleveland Pneumatic Tool Co. (F)        | Reed Engineering Co.                        |
| Corliss Carbon Co.                      | Reliance Electric & Engineering Co.         |
| Crocker-Wheeler Co.                     | Republic Flow Meter Co.                     |
| Crouse Hinds Co.                        | Robertson Cataract Co. (F)                  |
| Cutler Hammer Mfg. Co.                  | Rollway Bearing Co.                         |
| Cutter Electrical & Mfg. Co.            | Rowan Controller Co.                        |
| Delta Star Electric Co.                 | Schweitzer & Conrad, Inc.                   |
| M. H. Detrick Co.                       | Shepard Electric Crane & Hoist Co.          |
| Economy Fuse & Mfg. Co.                 | SKF Industries, Inc.                        |
| Edison Storage Battery Co.              | Square D Co.                                |
| Electric Controller & Mfg. Co.          | Standard Underground Cable Co.              |
| Electrical Materials Co.                | Superheater Co.                             |
| Electric Power Equipment Corporation    | Thomas Flexible Coupling Co.                |
| Electric Storage Battery Co.            | Thompson Electric Co.                       |
| Electro Labs Co.                        | Tide Water Oil Sales Corporation            |
| Electro Metallurgical Corporation (F)   | Tool Steel Gear & Pinion Co.                |
| Electro Service Co.                     | Trumbull Electric Mfg. Co.                  |
| Elwell Parker Electric Co.              | Truscon Steel Co. (F)                       |
| General Electric Co.                    | United States Graphite Co.                  |
| George J. Hagan Co. (F)                 | V. V. Fittings Co.                          |
| Hagan Corporation                       | Van Dorn Electric Tool Co.                  |
| Hayward Co.                             | Venango Sand Co. (F)                        |
| Harbison Walker Refractories Co. (F)    | Western Electric Co.                        |
| Hyatt Roller Bearing Co.                | Westinghouse Electric & Mfg. Co. (FI)       |
| Johns Manville, Inc.                    | Wickes Boiler Co.                           |
| Johns Pratt Co.                         | Wilson Welder & Metals Co.                  |
| Keystone Lubricating Co.                | Whiting Corporation (F)                     |
| Lakewood Engineering Co.                | Worthington Pump & Machinery Co. (F)        |
| Liptak Fire Brick Arch Co.              |   |
| Lumen Bearing Co.                       |   |
| London Steam Turbine Co.                |   |
| Mahr Mfg. Co. (F)                       |   |

### National Safety Congress

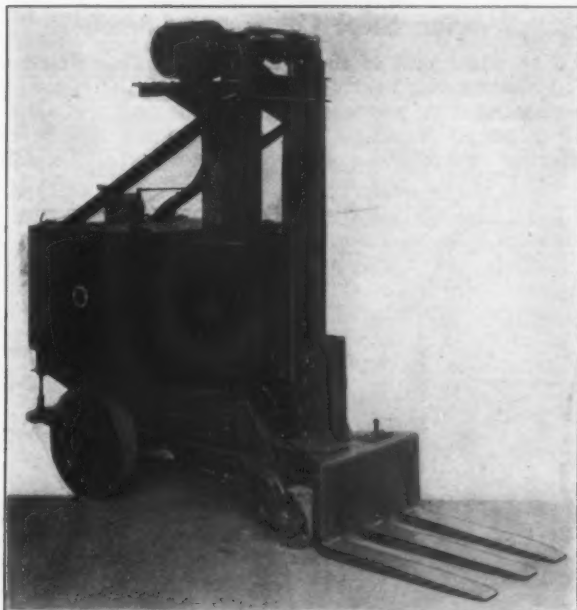
Sixty sessions are included on the program of the twelfth annual congress of the National Safety Council to be held at Buffalo, N. Y., Oct. 1 to 5, at the new Statler Hotel. The New York State Department of Labor and the American Association of Industrial Physicians and Surgeons are also planning annual meetings in cooperation with the congress and several joint sessions have been arranged. G. Howard Ferguson, premier of Ontario, Canada, will open the first general session. Other speakers will include Royal B. Meeker, commissioner Pennsylvania Department of Labor and Industry, who will talk on International Aspects of the Safety Problem, Bernard L. Shientag, commissioner Department of Labor, New York, and Lewis A. De Blois, E. I. du Pont de Nemours & Co., Wilmington, Del. A safety playlet—a scene in a foundry—will be staged by eleven steel workers from the Edgar Thompson Works of the Carnegie Steel Co. At least three new sections of the National Safety Council will be formed at the congress. They are the Ice and Refrigeration, Marine, and Employees Benefit Association. Between 500 and 600 benefit associations are now in operation in member companies of the council. A complete program of the congress is not yet available.



### New Model Tier-Lift Truck

A lifting, carrying and tiering truck, designed to pick up its load without the use of platform skids, has been placed on the market by Lakewood Engineering Co., Cleveland. A feature claimed for the new truck is that it permits of tiering or stacking material without the waste of 12 to 14 in. space incident to the tiering of loads on platform skids.

The new machine is known as the fork "tier-lift" and is in many details similar to the machine described in THE IRON AGE of Jan. 22, 1920. Its development is said to have resulted from a demand for the economical handling of such commodities as tinplate, taking into consideration the loading of the plate at the mill



Tiering Truck Designed to Obviate Use of Skids

and the unloading and storing at the factory. The use of platform skids for carrying the load into the freight car is said to have necessitated so large a quantity of skids that the investment charges offset the savings otherwise available.

Loads up to 2500 lb. may be handled, the load being placed on 2 x 2 in. strips. Tinplate may be placed on these strips in the car at the mill, and a similar truck may be used to unload it at the plant and stack it in 2000-lb. units, three-high. With a travel of about 125 ft., it is claimed that an operator and helper can unload a 35 to 40 ton car of tin in about 1 1/4 hr. The unit may be applied to the handling of other commodities, the saving of investment in skids being the feature.

The driving and lifting mechanism of the truck is standard. The forged steel forks or arms are placed on the truck to meet requirements in the handling of dies, flat paper, radiators, barrels and other commodities. The truck is made to lift to various heights.

### Storage of Coal

Difficulty with regard to coal supplies has caused the Link Belt Co., Chicago, to look into the subject of storing in summer a large part of the coal to be used the following winter. It has been generally assumed that provision in the industries for storing an average of 10 per cent of the year's coal requirements would form a sufficient balance wheel to relieve the extreme tension of coal delivery during the winter months, when railroad operation is difficult and coal demands great.

Among the reasons given for storing coal, in preference to taking a chance on getting it when everybody else is in the market, include both an assurance of the supply and a better quality of coal. It is believed that this will lower both the retail and the wholesale prices of coal and thus be of financial advantage all around. It will also relieve the nation's transportation system

of undue burden at the time of its greatest stress.

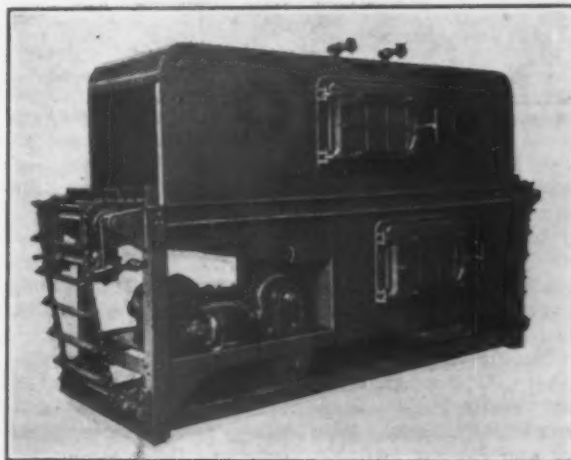
Naturally, the figures compiled by the Link Belt Co. point toward the use of mechanical means for unloading and handling the coal. The figures are based on results at a plant in Pennsylvania using about 4500 tons of coal per year and storing several hundred tons customarily. Coal is here piled in units of 70 tons and the total cost of handling the entire 4500 tons, including fixed charges on the equipment, depreciation, etc., is about \$675, or 15c. per ton. This figure was compared with manual handling, which at 40c. per ton aggregated \$1,800. The saving of more than \$1,100 represents almost the entire cost of the equipment in a single year.

### Improves Metal Washing Machines

Improvements have been made in the metal washing machines of the Crescent Washing Machine Co., New Rochelle, N. Y., increased speed and easier operation being features of the new machine.

The "revoiving wash" principle is incorporated as in the previous design. The work passes between two sets of wash arms, one set above and the other below. The arms revolve slowly and play the cleaning solution upon the parts to be cleaned. The machines may be used singly for either washing or rinsing metal parts, or, where both these operations must be done, two machines may be connected. Drying, lacquering and slushing are among other uses to which the machine may be put.

The model 1A automatic machine shown in the illustration will wash parts up to 18 in. wide and 14 in. high, placed directly on the conveyor. Smaller pieces are placed upon the conveyor in racks, the size of which are 17 1/2 x 17 1/2 in. The machine is compact and is intended for use in small metal cleaning departments, at the end of a line of automatic screw machines, or where available floor space is limited. The height is 57 1/2 in., the width 27 in. and the working



Compactness, Quick and Convenient Operation Are Features

level is 36 in. The tank is of 75 gal. The mounting of the pump and motors may be noted from the illustration. The pump is driven by a 1 1/2-hp. motor, a 1/2-hp. motor being used for the conveyor. The speeds are 2, 4, 6 and 8-ft. per min.

A model 2A machine of similar design is also available for parts up to 26 in. wide and 14 in. high. The height of this machine is 61 1/2 in. and the width 35 1/2 in., the working level being 36 in. The weight of this unit is 2550 lb. and that of the 1A, 2250 lb.

The Parker Wire Goods Co., Worcester, Mass., is operating in a new plant at Washington and Leamartine Streets. New machinery has been installed, and the metal stamping department enlarged. The plant is of one-story construction and contains about 44,000 sq. ft. of manufacturing space. E. D. Priest is chairman; Howard W. Nestor, vice-president and treasurer; W. H. Lawrence, production manager; W. A. Peterson, sales manager.

### Two New Material-Handling Trucks

The Yale & Towne Mfg. Co., Stamford, Conn., has placed on the market a high platform general utility truck and an elevating platform truck, designated as the K-20 and the K-22, respectively.

The K-20, shown in the left-hand illustration, is intended for the economical intraplant movement of material, which can be placed on the platform by hand, chain block, electric hoist or crane. A gravity dump body for handling loose material and an electrically operated swinging boom crane are available as auxiliary equipment. Large wheels, full spring suspension, ease of control, few parts, and these accessible and grouped into self-contained major units, are features. Pressed steel frames with integral battery box are used, and also the company's spur-gear unit power axle. Most of the single parts and unit assemblies are standard and are interchangeable with those of all other models in this series.

The wheelbase is 58 in. and the wheel tread 33 $\frac{3}{4}$  in. The overall length of the truck is 102 $\frac{1}{4}$  in., the width 38 in. and the height 53 $\frac{3}{4}$  in. The platform space is 38 x 84 in. and the height 25 $\frac{1}{2}$  in. The ground clear-

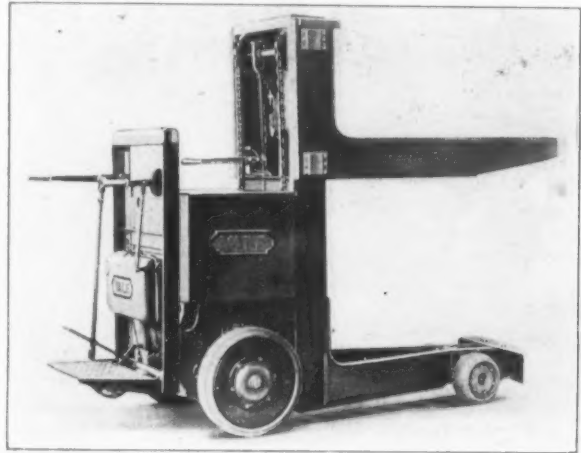


lowering speed, all loads, is 4 $\frac{1}{4}$  in. per sec. maximum, controlled by regenerative action of hoisting motor.

The hoist motor is entirely inclosed. The hoist controller is of the drum type with automatic throw-out when the platform reaches high and low position. The hoist unit is of the triple reduction spur-gear type, 105 to 1, is inclosed in housing, and drives the chain over hardened sheaves. The brake on the hoisting mechanism is of the external double shoe type and is mounted on the motor shafts and interconnected with the hoist controller. The wheelbase is 55 in., the length is 106 in. and the height 83 in. overall. The platform height is 11 in. in the low position and 61 in. in the high. The ground clearance is 3 $\frac{1}{4}$  in. The weight of the truck with Exide battery is 3300 lb.

### Weirton Steel Co. Improvements

New sheet mill of the Weirton Steel Co., Weirton, W. Va., is rapidly nearing completion and the company already is taking business for late September and October delivery. The first unit of four mills will be in operation about the middle of September. The mill



A Minimum Number of Parts and These Grouped Into Self-Contained Units, the Majority of Which Are Interchangeable With Those of All Other Trucks of the Series, Are Features. A gravity dump body and swinging boom crane may be provided for the industrial truck at the left. The lowering and lifting mechanism of the elevating platform truck, shown at the right, is of the triple, spur-gear reduction type, electrically controlled

ance is 5 in. The maximum speed, empty, on level concrete is 8 $\frac{1}{2}$  mi. per hr., and with 4000 lb. load 6 $\frac{1}{4}$  mi. per hr. The maximum speed on a 10 per cent grade, 4000 lb. load, is 2 $\frac{1}{4}$  mi. per hr. The rated capacity is 4000 lb. The turning radius of outside and inside edge of truck is 91 and 42 in. respectively. The minimum width of intersecting aisles for 90 deg. turn is 49 in.

The motor is series wound, totally inclosed, 36 volts, 45 amp. 1800 r.p.m. continuous rating and the battery may be either Edison or Exide. The controller is of the company's drum type with renewable arcing contact and cut-out switch. There are three speeds forward and reverse. Battery connector, resistor and charging plug are provided. The drive unit is of double reduction spur-gear type, 18.7 to 1, running in oil and mounted on ball bearings. Full floating axle shafts, driving the wheels through inclosed universal ball joints, are provided. The wheels are of pressed steel and are mounted in ball bearings, deep groove type. The brake, which is of the external double shoe type, is mounted on the motor shaft and operated by foot lever connected directly to the cut-out switch.

The elevating platform truck is shown at the right. It is a self-loading transportation unit designed to combine the advantages of high and low lifting and its rated capacity is 4000 lb. The drive unit is interchangeable with the K-20 platform truck and wheels, wheel bearings, brake and other units are of the same type as the K-20 truck. The turning radius of the outside and inside edge of truck is 90 and 39 in., respectively, and minimum width of intersecting aisles is 60 in. The truck speeds are the same as noted above. The hoisting speeds are 4 $\frac{1}{2}$  in. per sec. empty, and 2 in. per sec. maximum with 4000 lb. load. The

consists of eight hot mills, arranged in two trains of four mills each and four cold mills, with annealing and galvanizing departments. J. M. Hill, formerly with the Canton Sheet Steel Co., Canton, Ohio, and the Apollo Steel Co., Apollo, Pa., is manager of the mill, and Daniel Miller, formerly with the Brier Hill Steel Co., Youngstown, is superintendent of the galvanizing department.

The sheet mill is one of several additions made at this plant. The new by-product coke plant, consisting of 37 improved type Koppers ovens, now is in full operation, and making coke in less than 12 hr. coking time. C. R. Meissner, formerly with the Koppers Co., Pittsburgh, as engineer of tests, is superintendent of the plant, and Casey Evans, formerly at the by-product coke plant, Steubenville Works, Wheeling Steel Corporation, is assistant superintendent.

A Dwight-Lloyd sintering plant is another recent installation by this company.

At the directors' meeting of the Kelly Nail & Iron Co., held at Ironton, Ohio, I. Austin Kelly, New York, was elected president, without duties, to succeed the late Oscar Richey. I. P. Blanton was elected vice-president and general manager. Mrs. Nannie H. Wright and Frank L. McCauley, having sold their stock in the company and resigned from the board, their places were filled by T. J. Hayes, secretary of the company, E. K. McKeown, manager blast furnace department, and A. D. Markin. The company is now engaged in relining its blast furnace and connecting an engine installed in 1920. Other improvements are also being made to increase the capacity of the furnace from 125 to 200 tons of pig iron per day.



# Why Foreigners Are Needed in Steel Plants

## Practical Experiences Which Indicate Their Usefulness and Suggest the Wisdom of Modifying the Immigration Laws

BY GEORGE WALTER\*

HOW many American citizens, American-born, who are now crying out against the invasion of the foreigner, have witnessed this foreigner at work around the furnaces of a great steel mill? How many of these same patriots would have been willing to change places with him, had they seen him in action? And, if so, what would have been the wage asked? Then who are the individuals responsible for the cry against the high price of steel and steel products?

I have worked in the great mills at Gary and before the blazing furnaces of Pennsylvania, and my opinions are purely personal ones, formed as a result of experience. I was employed at Gary a few years ago, when labor was plentiful and choice jobs were not to be had. In a great plant of this kind "pull" avails little, and a man must play his part in the great machine efficiently in order to get on.

One day I had a letter from a friend, stating that he was out of work and wanted a job. Could I do anything for him? He was willing to do anything. I had known Bill for a long time. We had been farmer boys together, and I had always known him to be a good hard worker. I went to the superintendent of my department the next morning and asked him to hire Bill. The superintendent told me that he was "full up," but if I guaranteed Bill to be a good man, I could tell him to come ahead and he would make a place for him.

I wired Bill at once including carfare. Two days later he arrived, and I shared my room with him. I stood good for his meals at the restaurant and gave him some money for carfare to his work. The superintendent gave Bill a job at labor; the best he had at the time, but he gave him the preference and a soft job. Instead of being put to work with a gang of "foreigners" shoveling sand, he was given a job thawing out cars of sand with a steam hose. Fifteen minutes were required on this job to set the nozzles for an hour's thawing. This hour was then Bill's own. It gave him plenty of opportunity to go inside and get warmed up if he got cold. The first three nights Bill set his hose lines for the first time, and then went inside and slept the remainder of the night.

### It Was a Hunkie's Job

At the end of a week, the superintendent told me that Bill "couldn't stand the cold, but that he didn't mind heat." So he had transferred him to the rail mill. Two days later I found a note pinned to the bed saying that Bill hadn't come to "take a 'hunkie's' job"; he had at least expected a job fit for a white man, and he "had quit cold." After I had finished paying the bill at the restaurant and explaining to the superintendent that Bill had changed some, I decided that Bill was right. "It was a hunkie's job because the hunkie was the only one who could be trusted to do it."

Bill's case is only one of thousands, and it is because of this that the great steel industries have come to depend so much upon the foreigner. The foreigner comes to this country with little or nothing. His head is full of ideas of big money easily obtained. Friends soon place him to rights and, as soon as he realizes that he must work and work hard to get his big money, he goes to work. Long hours and hot furnaces do not deter him; he wants the money and gets

it. His work is well done because he knows that his job depends upon it.

He believes that seven or eight years over these furnaces will break his health, unless he is possessed with a super-physique, but he has no intention of doing this. A few years' hard work and frugal living, and he has saved considerable money. It requires considerable money, however, to live in the United States; so he either sets up a little business of his own or goes home.

This business he owns in its entirety. If it fails he alone is the loser. None of his friends has borrowed money sunk in the deal. But his business does not fail. He assured himself of that before he opened up. He works, his wife works and his children work helping to keep shop. Bye and bye he has put enough by to open another shop, and so it goes. Had he had the least doubt of success, he would have returned home, where his few thousands would have lasted him a lifetime. There he would have told "how he done it" and more would have come over to fill his place and prevent a shortage of help.

### Spending Money in Europe

Who spends the more money in Europe, the returned foreigner or the American tourist? Then why do we cry because American export business is so far below that of other countries who must depend upon export business for their very existence? We want to sell the foreigner the finished product of our factories, and yet we tell him blandly that he must not come over here and help make these products, even though he has sold his household goods to purchase his passage. The "quota is full" means just what it says, but the foreigner must spend his last few dollars and travel thousands of miles to the gates of Ellis Island to find it out. Then at the expense of the steamship company he is returned to his native land to see others living in his old home and others in his old place at the mills.

I have seen men in steel mills working entire shifts with wet towels bound around their foreheads. Smoke and soot gummed up with sweat ran down the bare blistered shoulders of the men at the soaking pits, spitting blue dust from their mouths as they shoveled it into the pits below. Small wonder that the cry should be, "This is no white man's job." Nevertheless this job is necessary to the production of steel, and the men who do it, though they may not be Americans, are white. Also many of them are embryo Americans. For years the steel interests have been bending their efforts toward Americanizing these toilers, and their efforts to a large degree have been fruitful. The allegation that the steel industries are un-American is false; they are decidedly American and have proved it, but they must get their work done to exist, and the foreigner seems to be the only dependable laborer available for the job.

### Agitating for More Money

Many who do not consider the steel industry in their attacks upon the foreigners make the complaint that they are responsible for low wages. But the steel interests will tell you different. Here is the bitter that comes with the sweet. The greater per cent of the foreigners are continually agitating for more money. When it is offered, nothing can stay the dropping of tools but an attractive counter offer.

"Me quit, boss."

"How come quit, John?"

\*In charge of maintenance Milholland Machine Co., Indianapolis, Ind.

"Me ketchim more money 'nother place."

"Yeah, and ketchim more work, too."

"No matter more work. Ketchim more money, plenty more money; me quit. Tomorrow me ask new boss give my friends job. Mebbe whole gang quit."

And the whole gang will quit unless the boss is wise and makes a raise. These men stick together and try to get for their friends as good as they have themselves. They are not afraid to recommend their friends, because they know that they will do a full day's work for a day's pay. They won't go to sleep on the job, as Bill did, not very often. They want

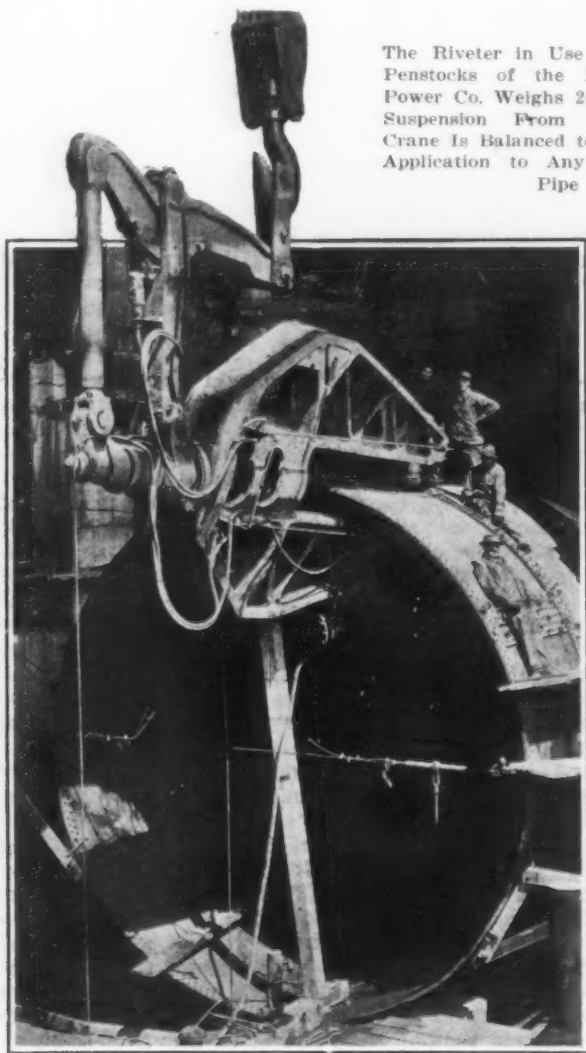
more money, though, and when they get it their American brother gets it, too, but he seldom realizes the part the foreigner played in getting it. When they strike, they strike until the day of settlement. Others may take their places or they may go to work elsewhere, but they won't sneak in through the back gate.

Steel wants and must have the foreigner. Steel is ready and willing to deal with the strike question among the foreigners. Then why not let down the bars a little and let steel have its labor and at the same time hold steel responsible for the good behavior of its imported product?

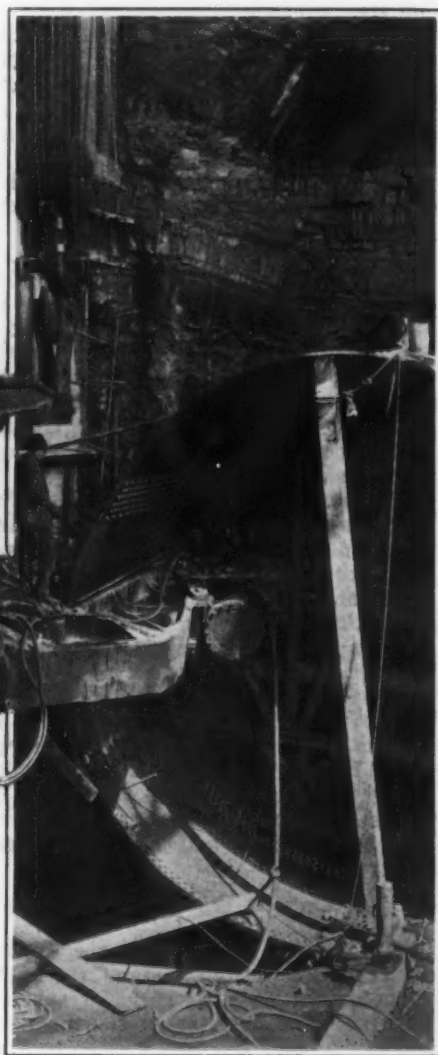
### Large Riveter Triples Speed of Hand Riveting

A record of 450 rivets in a working day of 8 hr. has been the average performance of the bull riveter in use on the penstock work at the Niagara Falls Power Co. tunnels at Niagara Falls, N. Y. On a

Each of the three penstocks is 21 ft. in diameter for the supply of 70,000-hp. turbines. The Hanna machine weighs 20 tons, and is slung from an overhead crane. It is balanced so that the operators can swing it in any position desired with but little effort. Air operated worms raise, lower or turn it.



The Riveter in Use on the 21-ft. Penstocks of the Niagara Falls Power Co. Weighs 20 Tons but Its Suspension From an Overhead Crane Is Balanced to Allow Ready Application to Any Part of the Pipe



regular run 45 rivets in 35 min. was the schedule. The riveter, the largest portable machine in use, was built by the Hanna Engineering Co., Chicago. It was described in THE IRON AGE of May 3.

Work on the second penstock has just been completed so far as the services of the riveter are concerned, and the third is not yet ready for riveting. The labor saving accomplished is computed at 66 per cent. The average work of a crew of seven men hand-riveting is 150 rivets in an 8-hr. day. The labor-saving feature is enhanced, it is held, through the fact that with hand-driven rivets a percentage must be allowed for cutting out loosely driven rivets—a condition not found in the machine-driven work.

The rivets used on the penstocks are 1 $\frac{1}{2}$  and 1 $\frac{1}{4}$  in. in size. The plates are 1 $\frac{3}{4}$  and 1 $\frac{9}{16}$  in. in thickness, and were rolled at Homestead. The jaws of the riveter compress the plates under pressure of 150 lb.

The work on the penstocks is done in the open, and as each ring is completed the tube is rolled into place on rails.

The Surplus Steel Exchange, Inc., 7 Dey Street, New York, recently organized, has opened an office in Chicago, 2257 Oakdale Avenue, to handle listings and inquiries from that district which hitherto have been dealt with from New York. This district comprises Illinois, Minnesota, Wisconsin, Iowa, Missouri and Indiana. Duplicate listings of surplus stocks will be kept on file both in Chicago and New York. A. E. Thiffault and Raymond I. Gaspers, both of whom have been affiliated with the steel trade for many years are in charge of the Chicago office. Both men were formerly with the American Sheet & Tin Plate Co. and Mr. Gaspers was at one time with the Illinois Steel Co.



# Inland Steel Co. and the Shorter Work Day

## Labor Lost to Plants Working the Long Shift— Steel Institute Plans 25 Per Cent Advance in Hourly Rate

CHICAGO, Aug. 6.—“Why did the Inland Steel Co. abandon the three-shift basis of operation in its steel works?” In answer to this question, which was put to him by a representative of THE IRON AGE, P. D. Block, president of that company, said:

“The plan was abandoned after 18 months’ trial in 1919 and 1920, because we could not hold our men. We paid the highest wages per hour, but our employees preferred to go to other mills and work a longer shift in order to obtain a higher total wage per day. The reason for our abandonment of the plan may be summed up in one word—competition. With all producers on the same basis, whether it be 8 hours, 10 hours, a combination of the two, or some other plan, no difficulties will be encountered on this score. It is for that reason that we have decided to adopt whatever program is put into effect by the industry.”

### Ten-Hour Shifts in Finishing Mills

“How much additional labor will be required when the 12-hour day is abandoned?”

“A definite answer to this question,” said Mr. Block, “cannot be made until we have completed an investigation which is now under way. We shall first determine exactly how many employees are now working 12-hour shifts. It is possible that they may constitute from 40 to 50 per cent of our total payroll. A second consideration is the number of hours which these men will work under the new plan which is being formulated by leading producers in the industry. It should be noted that while it has been definitely decided to abandon the 12-hour day, this does not necessarily mean the adoption of three shifts of eight hours each. In the continuous process departments, such as the blast furnaces, open-hearth furnaces and coke ovens, the adoption of the 8-hour day will probably prove necessary. In the finishing departments, however, the men may be put on a 10-hour basis.”

“Would not the production of the mills be curtailed if they were put on 10-hour shifts?”

“This would depend upon the condition of our order books. If they were such as to permit the completing of a section at the end of a shift, the two hours between shifts could be used for changing rolls. Of course, it frequently happens that rolls must be changed several times during the day.”

“Did you find when you were operating on a three-shift basis that the production per man per hour was greater than under the two-shift system?”

“No. On the contrary, we have produced more tonnage in two shifts from the same mills than we did with three shifts. I might say in this connection, however, that the efficiency of labor during the period in which we made our experiment was sub-normal, and better results should be obtained in three shifts than in two.”

### Questions of Cost and Labor Supply

“How much will the abandonment of the 12-hour day increase the cost of finished steel per ton?”

“At the present moment, I would prefer not to answer that question. When we have completed our investigation of costs and when we are operating on the new basis, we shall be in a position to make an intelligent estimate.”

“Will the steel industry be able to obtain the additional labor required?”

“It will encounter less difficulty in this direction than would have been the case three months ago. I favor, however, a modification of our immigration act, which would permit a larger number of workmen to enter this country from those sections of Europe which have heretofore furnished the bulk of labor in our mills. I am strongly in accord with the selective principle, but I believe the country would be benefited by more liberal application of it. Recently the steel plants have been forced to bring large numbers of negroes from the South and Mexicans from over the border, but it would be better for the industry and the country at large if the mills could continue to recruit their forces from the same European sources which have supplied their labor in the past. It is not in the interest of sound economy for one section of the country to take labor urgently required in another section. The negroes should remain in the South.”

### Institute Statement on Wage Readjustment

The past week has been another period of progress in the abolishing of the 12-hr. day in the steel industry. The principal event was the meeting of the directors of the American Iron and Steel Institute at the Metropolitan Club, New York, Thursday, Aug. 2, at which plans for establishing shorter hours were considered.

At the conclusion of the meeting, Judge Elbert H. Gary, president of the institute, issued the following statement:

“Following the correspondence between President Harding and the Steel Institute, and as a result of the most painstaking investigation, manufacturers of iron and steel, representing substantially the entire industry of this country, will now begin the total elimination of the 12-hr. day and will progress as rapidly as the supply of labor will permit. It is impossible to say when the changes will be completed. It will depend upon labor conditions at respective plants. There will be no unnecessary delay on the part of anyone.

“Where the hours of employees connected with continuous process are reduced from 12 to 8 hours, their wage rates will be so adjusted as to afford earnings equivalent to a 25 per cent increase in hourly and base rates.

“All other workmen will be on 10 hours or less and their present hourly and base rates will be continued; but whenever it is practicable, by promotions or changes in position, the daily earnings will be accordingly adjusted.”

The Wilson Foundry & Machine Co., Pontiac, Mich., has started construction work on extensive additions to its plant. These include the doubling of its assembling plant, where the Willys-Knight motor is produced. The present capacity of its assembling plant is 250 motors per day and this will be increased to approximately 500 per day when this unit is completed, probably around Jan. 1. A new mill room for cleaning castings and a new aluminum foundry are also planned. Yard facilities for handling coke, sand and pig iron are being changed and a crane with a 100-ft. span will be installed to cover the entire iron and scrap yard and also to convey these materials to the five cupolas. In addition to the Willys-Knight motor, which is built complete, this plant makes the castings for the small Overland car, now running between 700 and 800 per day.

# Continuity of Policy at Washington

## President Coolidge's Attitude Toward Important Questions Affecting Business—To Carry on the Work of Readjustment

BY L. W. MOFFETT

WASHINGTON, Aug. 7.—As a sorrowing nation pauses to pay tribute to Warren G. Harding, one of the best beloved of its Presidents, many here, where Government policies are so large a part of men's lives, are seeking to appraise the significance of the unexpected change in all calculations that has been brought about by his death. It would be presumptuous to forecast what President Coolidge may do in administering the affairs of state in any given case. But analysis of his record and of his temperament gives plain indication that he will be conservative and favorably disposed toward business. It is equally to be expected that he will show like fairness to labor, whether organized or not.

A conspicuous event in the life of President Coolidge, when he was Governor of Massachusetts, no doubt is so deeply graven on the minds of organized labor leaders that they will hotly deny that he is a friend of organized labor. But when Mr. Coolidge summarily broke the police strike in Boston the blow was not directed at organized labor as such, but rather at the attempt of representatives of organized society to desert their tasks and let the forces of disorder take control.

The new President has announced that he will carry out the policies of his late chief. This in itself assures fair treatment to capital and labor and from an international standpoint the maintenance of friendly and helpful relations with foreign governments. The wide difference in the temperaments of Mr. Harding and President Coolidge suggests that variations may be expected in methods of administration. The late President was of benign and gregarious nature, thoroughly enjoyed greeting people, loved peace and in order to maintain it was willing to compromise even to a point which many of his friends thought was extreme. President Coolidge, taciturn as an official, anxious to survey thoroughly and understand a situation before action, is immovable once his mind has been made up.

### The Trying Period of Readjustment

Mr. Harding came into office during the trying period of reconstruction. As Mr. Harding sought an "era of understanding," so will Mr. Coolidge, according to those intimately acquainted with him, and it may be expected that he will continue the Harding plan of bringing opposing elements into closer relationship. In his zeal to bring the country back to "normalcy," the lamented President sought to remove any causes of difference with foreign governments, including the late enemy nations. The most important legislation of the past two years was the revision of tax and tariff laws and the act restricting immigration, and the President warmly urged and succeeded in having passed the rural credits laws to aid the farmer. He vetoed the soldier bonus bill, yet it was expected that had he lived he would have approved of the plan of Republican leaders in Congress to grant a bonus to the soldiers at the next session, although it is vigorously opposed by business interests. The attitude of the new President on this matter remains to be seen. One of President Harding's greatest achievements, next to the results of the armament conference, was the cutting down of Government expenditure and the enforcement of economies needed to bring the country to a peace-time footing. His firmness in enforcing this policy was outstanding.

### A Business Administration

"Mr. Coolidge will give a business administration," said one who has had an opportunity to give his record a close study. "He has backbone and a stability that

is based on common sense and determination to do his duty. He dislikes political blocs, and if it becomes necessary there can be no doubt that he is prepared to come into sharp conflict with them at any time. It is a mistake to say that he is anti-labor."

Greatly as he was respected, there were many who thought that President Harding was too generous in his treatment of the coal and railroad strikes, and it is believed that Mr. Coolidge will adopt a more determined policy in the case of the pending anthracite situation.

### Tariff and Taxes

President Coolidge has the view of the New England Republican concerning the tariff. Because of this he is classed as a high protectionist. It is doubted whether he is as sympathetic toward the flexible provisions of the Fordney-McCumber act as was Mr. Harding, at whose behest this departure of tariff rate readjustment was incorporated in the law. The new President has indicated that he favors downward tax revision, though what he may accomplish in this direction at the next Congress is problematical. It is his view that, for the interest of business as well as of labor, the Government should encourage the expansion of the former and in order to do so must not assess excessive taxes against profits, but rather give business an opportunity to reinvest a portion of its earnings. Naturally he is opposed to Government ownership of public utilities, but it is believed he would have no hesitancy in establishing control over the railroads and coal mines if the absence of such action would mean interruption of service to the country.

On the matter of immigration, which some leaders in the iron and steel industry say must be less restricted if they are to be assured of an adequate supply of workers, it is not believed that President Coolidge will be at all inclined to a liberalization of the law. It has been pointed out that he might be willing to see it revised in some respects, but that it is improbable that he will be agreeable, even if he could get the concurrence of Congress, to a letting down of the bars to any noticeable extent. He is an earnest advocate of a strong American merchant marine and favors the ship subsidy bill sponsored by the late President.

### A Cabinet Viewpoint

Business interests of the country find assurance in the fact that President Coolidge has an unusually intimate knowledge of the Harding policies. This is due to the plan the late President inaugurated of having the Vice-President attend Cabinet meetings. While in promising to continue the policies of the Administration President Coolidge also asked all Cabinet members to remain, it is quite conceivable that some changes in the Cabinet personnel may take place. It is recognized, also, that it may not be possible for President Coolidge to follow strictly all of the Harding policies, and that his handling of the problems before him will be on his own lines. He is less flexible than Mr. Harding, and temperamentally much more like former President Cleveland. With the determination of a Roosevelt, he is entirely without the latter's crusading spirit. He is confidently expected to be a careful, conservative President who will seek in every way to carry forward without hurt to business the policy of readjustment from war conditions and of relief from war-time burdens.

New and special courses in metallurgy and allied subjects have been announced by the Carnegie Institute of Technology in Pittsburgh.





## Mining and Milling of Fluorspar

Preparation of This Mineral, Essential As a Flux in Steel Making, Has Complexities Comparable with Those to Be Found in Manufacturing Plants

**F**LUORSPAR is fully as necessary a material in certain phases of American steel manufacture as the metal that enters the furnace. Without it, it is doubtful whether basic open-hearth practice would have achieved its dominant position among steel-making methods. Of the entire output of fluorspar, 80 to 85 per cent is used in basic open-hearth and electric furnaces as a flux and detergent and there is no known substitute. Yet until recently it has remained in obscurity and few users have been familiar with the treatment which the mineral must undergo before it is suitable for introduction into the furnaces.

Off hand, it might be assumed that its production would offer no more difficulties than the quarrying and crushing of limestone, another important material used in iron and steel making. As a matter of fact, however, the mining of the ore on a large scale necessitates extensive underground workings and the milling of the mineral after its elevation to the surface has complexities comparable with those to be found in many manufacturing plants. In a broad sense, quantity production of fluorspar for the market is a combination of mining and manufacturing.

Small scale operations which consist merely of quarrying the mineral, have been rapidly disappearing as the available supply of high-grade spar is becoming exhausted. The extraction of the ore and its treatment will become more and more expensive as the necessary investment in equipment increases. Fortunately the fluorspar required in the steel industry, while amounting to a considerable tonnage in the aggregate, is only about 10 lb. per ton of steel produced. Increases in the cost of spar therefore are not likely to become so great as to restrict its use or to materially affect the cost of steel making.

The most recently constructed fluorspar mill in this country is that of the Hillside Fluorspar Mines at Rosiclare, Ill. In its construction and equipment it is

as substantial and complete as any steel works unit. Built of reinforced concrete and structural steel, it has a large area of window space in the side walls, as shown above, as well as skylights in the roof. The power house is shown in the left background, the hoist house at the extreme right and mine timbers at the lower right corner. The belt loading conveyor is in the left center. Mechanical equipment, electrically driven, is provided for all milling operations, and the plant is carefully planned so that the material moves in logical sequence, with no unnecessary handling.

Ore is hoisted from the mine by self-dumping skip to a storage bin which is considerably higher than the remainder of the plant. A reciprocating feeder pushes the mine run ore into a revolving washing screen, from which under-size material is discharged through a launder, or chute, to a shaking screen for further treatment. The over-size material is passed from the screen to a continuous three-compartment traveling steel picking belt. This is located on the top floor of the building where excellent light is afforded by continuous sash and roof lights. Pickers, stationed on each side of the belt, remove the waste rock and throw it into bins in back of them, at the same time placing selected acid or other lump spar in the middle compartment of the belt. The waste hoppers overhang tracks and the waste rock is emptied into small dump cars for removal to the waste dump.

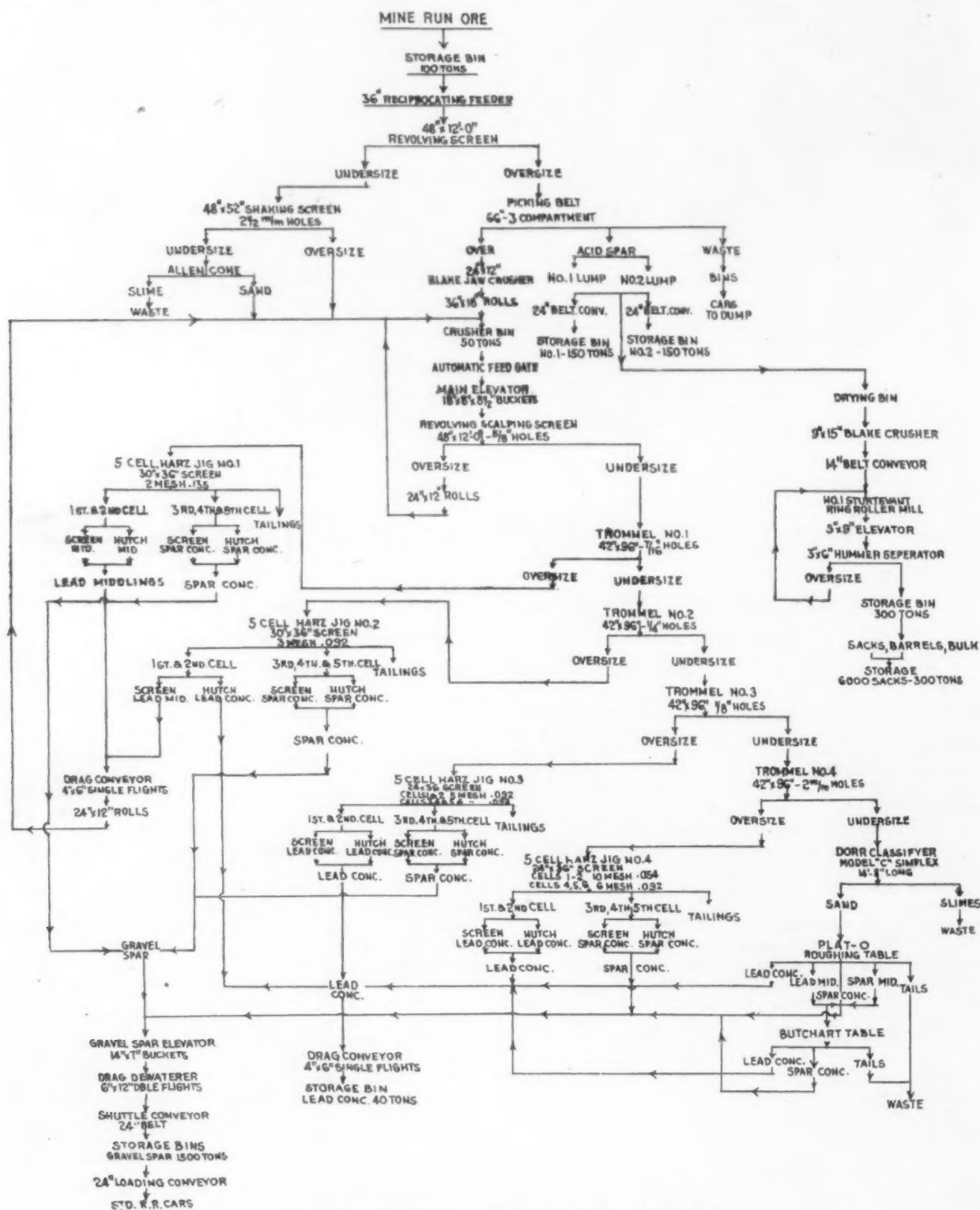
The spar remaining in the two side compartments of the belt is discharged into a Blake jaw crusher, from which it is passed through a pair of crushing rolls into a 50-ton bin. From the bottom of the bin the spar is automatically fed through a feeder to a bucket elevator by which it is carried up and discharged into a scalping screen which takes out the oversize for re-crushing, the undersize passing to the sizing trommels or revolving screens, arranged on an incline, each trommel being a step lower than the preceding one. A

continuous stream of water passes through them, flushing the under-size material from trommel to trommel. The over-size ore is discharged from each trommel through a launder to a jig. The under-size from the final trommel goes through a launder to a Dorr classifier which will be referred to later.

The separation of the fluorspar and lead from the

which forces water up through the mass of ore on the screen on the down-stroke of the plunger, and allows the mass to come back to the screen as the plunger moves up.

As the grains of mineral on the jig screen are approximately the same size, and as two grains of the same size but different specific gravity will fall at dif-

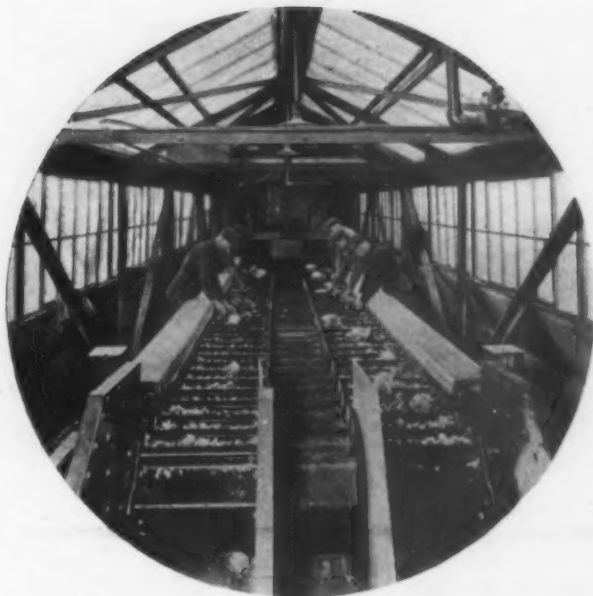


worthless gangue material is accomplished by wet jigging on Harz type jigs. A jig of any type is a device for giving pulsations to a mass of ore which is being treated by it.

In the Harz jig the mass of ore rests on a fixed screen in a box filled with water, and opposite to the screen is a plunger, having an up-and-down motion,

ferent rates of speed, the heavier falling the faster, so under the influence of the pulsating plunger the heavy lead and spar grains work their way to the bottom next to the screen and the smallest particles go through into the box below, known as the hutch, from which they can be drawn at intervals. The grains next to the screen form a bed which is drawn off under a



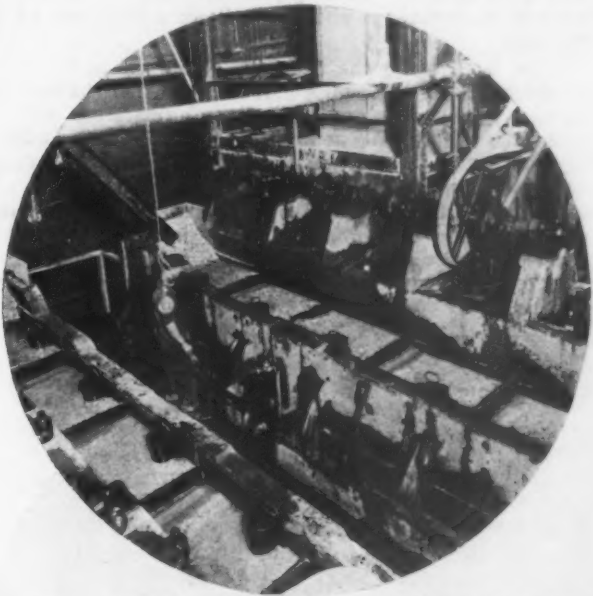


The Picking Belt at the Top of the Building Contains Three Compartments. The waste is picked out of the side compartments and selected acid lump bar is placed in the center compartment

skimmer at intervals, as it accumulates, and the waste material works its way to the top.

On a commercial Harz jig it is usual to have a number of screen and plunger boxes, known as cells, arranged in series, with a slight step or fall below, each cell giving a cascade effect.

The plungers are all driven from a common shaft by a series of eccentrics, and the ore is fed continuously to



Two of Four Jigs Having Five Compartments Each, in which Lead, Fluorspar and Tailings Are Separated

the highest cell, which extracts part of the valuable minerals and passes the remainder over a tail board or partition to feed the next cell, which also separates part of the valuable minerals, and passes the remainder to the next cell and so on until, at the tail of the last cell there are not enough valuable minerals for further jigging and it is discharged as waste, or tailings. In the Hillside mill there are four sets of Harz jigs, each served by its respective trommel, and each jig has five compartments or cells. These jigs are of concrete construction.

The lead, being the heaviest mineral, is removed first, and this is done on Richards pulsator jigs, of which there are four arranged ahead of, and in tandem with, the Harz jigs.

These jigs have no plungers and the pulsating movement of the water in the jig is accomplished by a

rotating valve which interrupts the flow of a stream of water, furnished by a tank, thereby giving a series of rising and falling movements to the material on the screen. The Richards jigs receive the entire stream of feed from the trommels and take out the lead concentrates, and pass the rest of the material to the Harz jigs, which remove the spar, discarding the calcite and limestone as tailings.

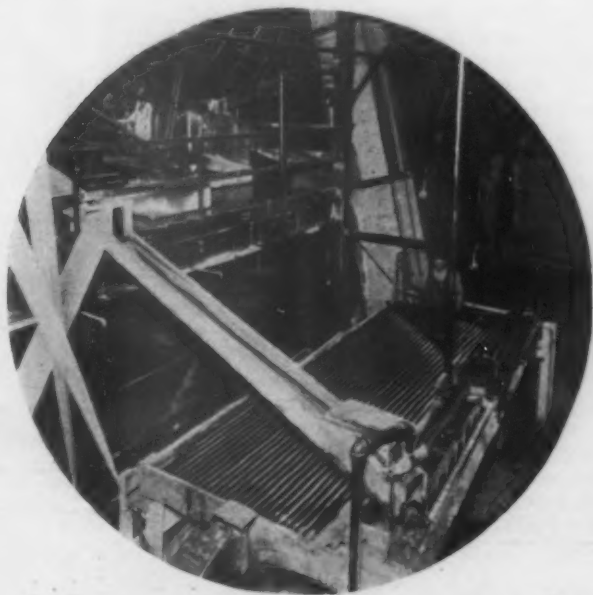
Not all the lead concentrates are clean enough to go to the storage bin, and part of the coarsest contain too much spar and must be recrushed to unlock the values. These middlings, as they are called, are passed to an elevator which discharges into a small trommel. The over-size from this trommel feeds a small pair of rolls, the product from which passes to the elevator and



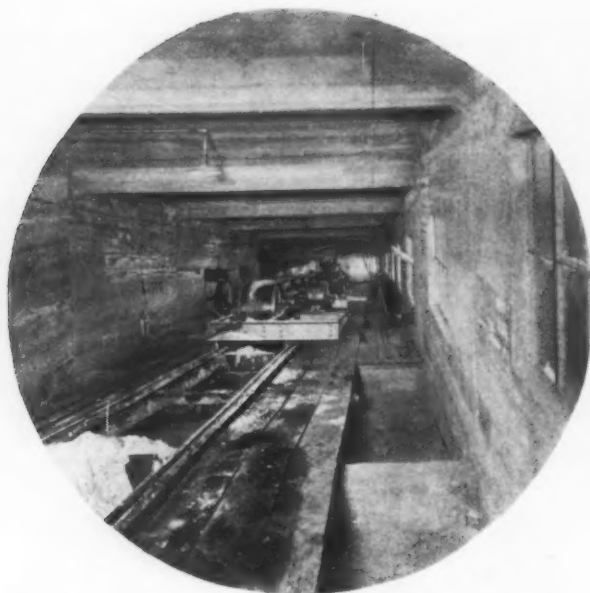
Row of Four Trommels for Jig Sizing. From these trommels even sizes for each jig are obtained, thereby insuring satisfactory concentrating

back to the trommel. The screen products from the lead trommel are laundered to the Richards jigs taking the finer sizes of feed. The lead concentrates are dropped into boxes and wheeled to bin for storage.

The spar concentrates from the Harz jigs are laundered to an elevator which discharges into a drag de-waterer. After de-watering, the concentrates, known



The Undersize Spar from the Trommels Is Separated into Lead, Spar and Tailings on a Plat-O Roughing Table, which Is Shown in the Right Foreground, and Later on a Butchard Table, which Is Shown Below to the Left



An Electrically-Propelled and Operated Shuttle Conveyor at the Top of Concrete-Covered and Drained Storage Bins Delivers Spar into the Various Bins as Required



Underneath the Concrete Storage Bins Are Hoppers by Means of which Spar Is Passed Through the Distributor. Shown in the Background, to the Conveyor Belt for Car Loading. The boy is selecting samples

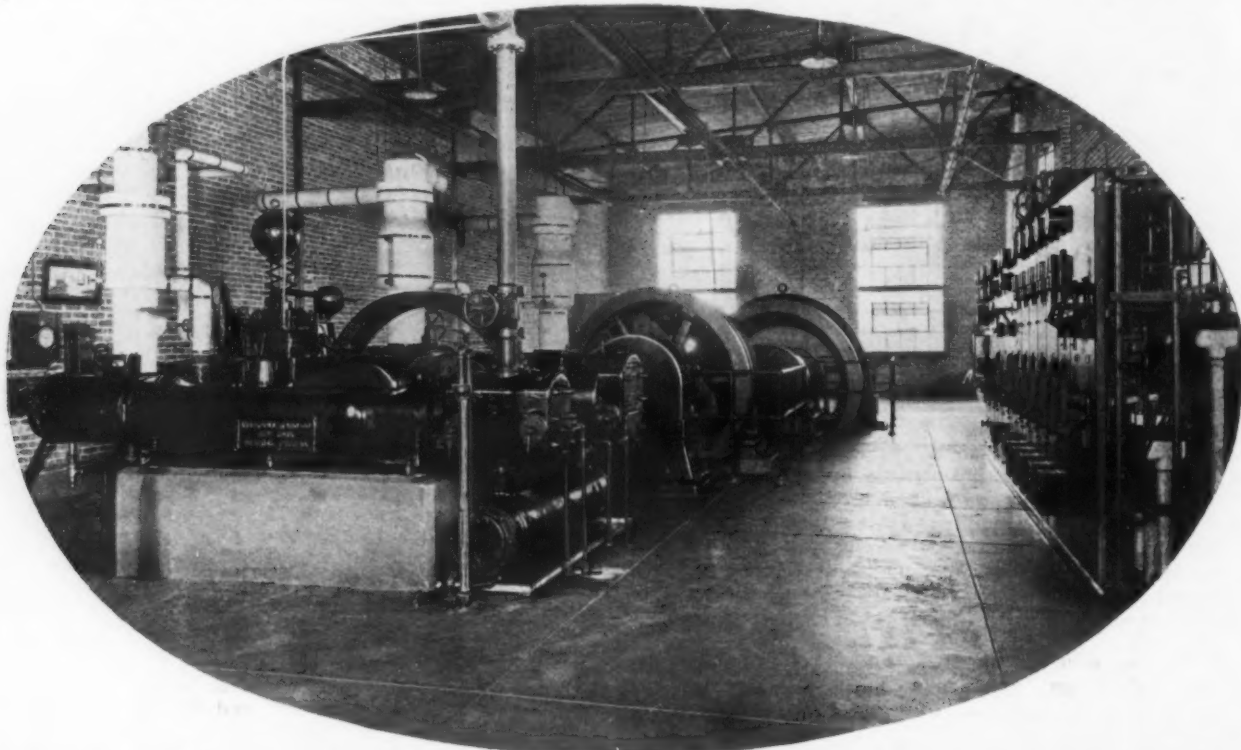
as gravel spar, are dropped on a shuttle conveyor which is arranged to discharge into any one of a series of storage bins. The bins have a capacity of 150 tons each, and are provided with gates at the bottom from which the spar is drawn off on a belt conveyor. The latter carries the material to chutes alongside the railroad tracks by means of which either box or open cars may be loaded. A boy stationed at this belt collects samples of the material going into a car for chemical analysis. Complete laboratory equipment has been provided and analyses are made of mill run spar heads or feed for the jigs, jig tailings, and gravel spar as delivered from the bins.

The under-size spar from the trommels is handled separately from the material just described. Sluiced through launders to a Dorr classifier, it is de-slimed and de-watered; it then passes to a Plat-O roughing table. This table is rectangular and is set level, the long way, with the deck inclined from the feed side,

toward the tailing side. The head motion gives the table a reciprocating movement, lengthwise with a slow forward stroke and sharp return. Narrow riffles lengthwise of the table form channels to hold the heavier minerals which work to the bottom, while the lighter gangue minerals are forced to the top and washed over the riffles by the flow of wash water. The motion of the table carries the heavier minerals toward the discharge and the tailings are washed over the side.

The lead, being the heaviest, comes off in the two of three riffles at the high side and the spar, being the lighter, comes next and, by proper adjustment of the table, the tailings are kept to the low side of the table.

This table, in addition to clean spar and lead concentrates, makes a mixed product of lead and spar, or middlings, which are re-treated on a Butchart table, which operates on similar principles to the Plat-O just described and makes clean lead and spar concentrates.



A Well-Equipped Power House Provides Electrical Power for All Milling and Mining Operations. An air compressor is shown in the foreground, and engines and generators in the rear



The lead is wheeled to the lead bin, and the spar joins the stream of gravel from the jigs.

The preparation of the bulk of the spar milled has been outlined, but thus far little has been said concerning the disposition of the under-size material discharged from the initial revolving screen or washer, or of the acid spar sorted on the picking belt. The under-size from the washer screen is discharged to a shaking screen and the material which fails to pass through the mesh is dropped into the 50-ton mill bin. The spar which passes through the screen is fed to an Allen cone which separates sand and slime. The slime is wasted and the sand is de-watered and sluiced to the main mill bin for further treatment.

The acid spar collected on the middle compartment of the picking belt is separated into grades known as No. 1 and No. 2 lump, and is discharged into a storage bin, from which it is drawn for sacking, or shipment in bulk.

A well-equipped power house provides electrical power for all milling and mining operations. The equipment is as follows: Four Erie City 150-hp. horizontal return tubular, 72-in. x 18-ft. 150-lb. suspended setting, flush front, hand-fired boilers, set in two batteries and equipped with balanced draft by the Engineer Co. Two Cameron horizontal plunger boiler feed pumps, 12 x 6 x 18-in. and a feed water heater furnished by the Hoopes Mfg. Co. A Chuse non-releasing 18 x 21-in. Corliss engine, direct-connected with a General Electric 210-kva. 2300-volt, 3-phase, 60-cycle 200 r.p.m. alternator, and a Chuse non-releasing 23 x 28-in. Corliss engine, direct-connected with a General Electric 450-kva. 2300-volt 3-phase 60-cycle 150 r.p.m. alternator, both units having belted exciters. A switchboard

of black slate furnished by the Marquette Electric Engineering Co., Chicago. Two steam-driven Ingersoll-Rand Co. air compressors supply 650 cu. ft. per min., one a type X P V 3 and the other a F. R. I. type 173 F. P. M.

Water used in milling is pumped from the storage pond to a 50,000-gal. tank by two 1000-gal. motor-driven centrifugal pumps. After it has passed through the mill it is returned to a settling pond for re-use.

The Hillside mine is opened on the Rosiclare vein, which is a fissure vein of varying width and depth occupying a fault in the rock formation. The vein is nearly vertical so that shafts must be sunk for mining. From the shafts, drifts are driven in the ore at vertical intervals of 75 to 100 ft. The drifts are generally carried the full width of the vein and 12 to 14 ft. high so that necessary head room for timbering is secured. Stopes of broken ore are then beaten out above the timbering and the ore is drawn off through chutes to mine cars. Pockets at the shaft station are provided into which the mine cars discharge the ore through gratings, known as "grizzlies." Large pieces, too large to pass through, are broken to smaller size with sledge hammers. The ore is hoisted in a self-dumping skip which is loaded from gates in the pockets. The skip is operated by a Nordberg double-drum electric hoist, hoisting a 3-ton skip in balance with a cage. This hoist has cylindrical drums 5 ft. in diameter, hydraulically operated post brakes, and Lilly safety controllers, and is geared through herringbone gears to a 150-hp. 2300-volt General Electric Co. induction motor. The shaft is lined with concrete and has three compartments, two for cage and skip and the other a pipe and ladder compartment.

## MOBILIZING INDUSTRY

### Plans of War Department Include Effort to Eliminate Profiteering

WASHINGTON, Aug. 7—Plans being studied for the mobilization of industry in case of war have just been published in a pamphlet by the office of Assistant Secretary of War Dwight F. Davis. It is the purpose of the pamphlet to inform business men and the public generally about this extremely important feature of the national defense. It is pointed out that every man, woman and child, every resource and every dollar in the entire nation must throw its weight toward victory in time of war. Industry alone cannot win a war, the Assistant Secretary states, but it can lose a war by failing to supply the armies with munitions, vital to their fighting efficiency.

The Assistant Secretary of War declares that one of the objects accomplished by the plans being prepared will be the elimination of profiteering, the pamphlet stating:

"In this connection the War Department is giving most careful attention to the ways and means whereby profiteering may be controlled in time of war. The principle that the men at home shall not profit from the war, while their fellows are staking their lives and their health for their country, is fundamental as a proposition of common justice."

The Assistant Secretary has explained that the plans are being worked out on a strict business basis and claims that in case of another emergency they would save billions of dollars as compared to the amount wasted in the last war.

The definite requirements of the Army will be carefully figured, in order that no unnecessary articles may be purchased. Standard specifications used in industry will be employed wherever possible. A uniform contract will be worked out, in order to eliminate the chances of fraud and confusion. The plan will also take into consideration the prompt settlement of obligations and the return to normal conditions at the conclusion of the emergency.

Cooperation with the Navy in developing procurement plans will be accomplished by the recently created Army and Navy Munitions Board.

It will be necessary, in time of war, to create an agency similar to the War Industries Board to co-ordinate the civilian demand with those of the Army and Navy.

In order to prevent competition among procuring branches, facilities requested by them have been tentatively allocated for the purpose of procuring the supplies required. The officers in charge of procurement districts are engaged during the present year in making a survey of establishments required to meet the supply program.

The ordnance procurement agencies are located at Boston, Baltimore, Bridgeport, Conn., Chicago, Cincinnati, Cleveland, Detroit, New York, Philadelphia, Pittsburgh, Rochester, N. Y., San Francisco and St. Louis.

### Encouraging Manufacturing

The problems facing the Ordnance Department and Air Service are declared to be peculiarly critical. It is pointed out that in the case of the Ordnance Department the maintenance of war reserves is vital. "While at the present moment we are fairly well off in this connection, 10 years or even five years hence we probably will be in much worse shape, especially in the matter of explosives," says Assistant Secretary Davis. "Weapons of war change rapidly, and it is very difficult to forecast 10 years in advance the types that will be required. It is very unlikely that Congress will ever consent to appropriate in time of peace sufficient money to maintain a war reserve which military men would like to have in order to insure a more rapid mobilization. There seems to be, therefore, but one thing to do in connection with the ordnance problem, and that is to secure sufficient appropriations annually to keep the art of manufacture alive. This will involve placing annually 'education' or 'experimental' orders with selected facilities, furnishing them with the necessary jigs, dies, gages, etc., in order to encourage them to experiment in the manufacture of these non-commercial articles." It is stated that the air service problem is even more critical.

As the planning develops, it is pointed out, critical features will become known and deliberate decisions can be made, the advice and judgment of men of great experience in industries being obtained on questions of major importance.

## Accounting for Foundry Overhead Expense

### How the Expenses, Other Than Those of Labor and Material, of Core Making, Molding, Cleaning and Annealing May Be Classified

BY F. C. EVERITT AND JOHNSON HEYWOOD\*

THE first of the productive departments is melting. It was discussed in detail in the earlier article on accounting for material. Therefore we will jump directly to the core room, whose expense analysis is shown as form 37-9.

The materials used in the core room, such as sand, core oils, compounds, flour, molasses, etc., are not the type of direct materials which will be found in the finished casting, and so cannot be treated the same as iron, which is the real direct material in the product. Usually core materials are bought in such quantities that the charge may be made direct to the department, the charges being monthly debits to the manufacturing expense account. This greatly simplifies the accounting and avoids requisitioning small quantities from stock.

Since a three or four months' supply of sand is purchased at one time, the charge is made to the sand

\*Of Miller, Franklin, Basset & Co., New York. Material cost accounting was discussed in the issue of April 26; labor cost accounting in the issue of June 14; and two sections of the discussion on overhead expense accounting were given in the issues of July 12 and July 19.

inventory account and the amounts used during each month reported, so that the actual consumption can be charged to the manufacturing expense account and credited to the inventory account.

The monthly total for supplies is added to the direct core-making labor. This sum, divided by the total weight of castings produced, gives a base cost per pound, in the same way as was used in determining iron costs. This method is reasonably accurate in foundries making a fairly uniform type of castings or whose castings can be divided into a few classes. It is especially good where one class of castings is made, though instances may arise where an entirely different unit may be necessary. In foundries doing a general jobbing business, care must be used in determining the core cost for the job.

In order to illustrate the workings of the analysis, two ways of arriving at a unit cost are shown:

- (a) Percentage of total core making expense to direct labor.
- (b) Base core cost per pound of total castings produced.

| EXPENSE ANALYSIS |                                 |                      |         |                |                       | YEAR _____ |                |
|------------------|---------------------------------|----------------------|---------|----------------|-----------------------|------------|----------------|
|                  | PAGE                            | FOR MONTH OF JANUARY |         |                | FOR MONTH OF FEBRUARY |            |                |
|                  |                                 | NORMAL               | ACTUAL  | PERIOD TO DATE | NORMAL                | ACTUAL     | PERIOD TO DATE |
| 9                | CORE ROOM                       |                      |         |                |                       |            |                |
|                  | FURNITURE                       |                      | 60.00   |                |                       |            |                |
|                  | MISCEL LABORS                   |                      | 10.00   |                |                       |            |                |
|                  | SMALL TOOLS                     |                      | 5.00    |                |                       |            |                |
|                  | OILS GREASE WASTE               |                      | 150.00  |                |                       |            |                |
|                  | FUEL                            |                      | 50.00   |                |                       |            |                |
|                  | SAND                            |                      | 68.00   |                |                       |            |                |
|                  | CORE COMPOUNDS                  |                      | 30.00   |                |                       |            |                |
|                  | CHAPLETS                        |                      | 15.00   |                |                       |            |                |
|                  | WOOD WIRE                       |                      | 17.00   |                |                       |            |                |
|                  | MISCEL SUPPLIES                 |                      | 16.00   |                |                       |            |                |
|                  | MAINTENANCE MATERIALS           |                      | 519.00  |                |                       |            |                |
|                  | TOTAL DIRECT EXPENSE            |                      | 31.52   |                |                       |            |                |
|                  | I SHARE STEAM                   |                      | 15.10   |                |                       |            |                |
|                  | E " POWER & LIGHT               |                      | 21.87   |                |                       |            |                |
|                  | E " T.E.M. LAB. & EXP.          |                      | 15.00   |                |                       |            |                |
|                  | JA " FINDER CHARGES             |                      | 623.69  |                |                       |            |                |
|                  | TOTAL                           |                      | 270.91  |                |                       |            |                |
|                  | B SHARE GENERAL FACTORY         |                      | 249.77  |                |                       |            |                |
|                  | 7 " " FOUNDRY                   |                      |         |                |                       |            |                |
|                  | TOTAL CORE MAKING EXPENSE       | 1085.00              | 1133.17 |                |                       |            |                |
|                  | DIRECT CORE MAKING LABOR        | 700.00               | 700.00  |                |                       |            |                |
|                  | PERCENT EXPENSE TO LABOR        | 185                  | 141     |                |                       |            |                |
|                  | TOTAL LABOR & EXPENSE           | 1785.00              | 1823.17 |                |                       |            |                |
|                  | POUNDS DIAL CASTINGS PRODUCED   | 3100.00              | 3100.00 |                |                       |            |                |
|                  | BASE COST PER LB TOTAL CASTINGS | .00 23               | .00 23  |                |                       |            |                |
|                  | LABOR                           | .00 25               | .00 36  |                |                       |            |                |
|                  | EXPENSE                         | .00 58               | .00 59  |                |                       |            |                |
|                  | TOTAL BASE COST PER POUND       |                      | 38.17   |                |                       |            |                |
|                  | ABNORMAL LOSS GAIN              |                      |         |                |                       |            |                |
|                  | (37-9)                          |                      |         |                |                       |            |                |

Molding Department Expenses  
Are Analyzed as Shown in  
Form 37-10

FORM 10-1-57

1/3 PAGE

# EXPENSE ANALYSIS

YEAR

| 10 | MOULDING                    | FOR MONTH OF JANUARY |         |                | FOR MONTH OF FEBRUARY |                     |                |
|----|-----------------------------|----------------------|---------|----------------|-----------------------|---------------------|----------------|
|    |                             | NORMAL               | ACTUAL  | PERIOD TO DATE | NORMAL                | ACTUAL              | PERIOD TO DATE |
|    | FOREMAN                     |                      | 175.00  |                | FROM                  | POST ROOM           |                |
|    | MISCL LABOR                 |                      | 115.00  |                | "                     | "                   | "              |
|    | SMALL TOOLS                 |                      | 35.00   |                | "                     | E. REQUISITION      |                |
|    | OIL, GREASE, WASTE          |                      | 15.00   |                | "                     | E.                  | "              |
|    | GASGOL CHIPS, CHAPLATS      |                      | 27.00   |                | "                     | E.                  | "              |
|    | RIBBLES, SHOVELS, BILLOWS   |                      |         |                | "                     | E.                  | "              |
|    | SAND                        |                      | 120.00  |                | "                     | REPAIRS             |                |
|    | PARTING COMPOUND            |                      | 20.00   |                | "                     | "                   |                |
|    | PACINGS                     |                      |         |                | "                     | "                   |                |
|    | MISCL SUPPLIES              |                      | 25.00   |                | "                     | E. REQUISITION      |                |
| 4  | MAINTENANCE - PATTERNS      |                      | 77.51   |                | "                     | DEPT NO. 4          |                |
| 4  | " " PLASKS                  |                      | 74.81   |                | "                     | " NO. 6             |                |
|    | MAINTENANCE MATERIALS       |                      | 36.00   |                | "                     | E. REQUISITION      |                |
|    | TOTAL DIRECT EXPENSE        |                      | 763.12  |                |                       |                     |                |
| 1  | SHARE STEAK                 |                      | 57.09   |                | "                     | DEPT NO. 1          |                |
| 2  | " POWER & LIGHT             |                      | 60.41   |                | "                     | " NO. 5             |                |
| 3A | " T.E.M. LAB. & EXP.        |                      | 76.56   |                | "                     | " NO. 3             |                |
|    | " FIBER CHARGES             |                      | 40.00   |                | "                     | PROD. CONTROL SHEET |                |
|    | TOTAL                       |                      | 194.06  |                |                       |                     |                |
| 6  | SHARE GENERAL FACTORY       |                      | 176.70  |                | "                     | DEPT NO. 6          |                |
| 7  | " " FOUNDRY                 |                      | 109.45  |                | "                     | " NO. 7             |                |
|    | TOTAL MANUFACTURING EXPENSE | 2500.00              | 2705.28 |                |                       |                     |                |
|    | DIRECT MANUFACTURING LABOR  |                      | 3200.00 |                | "                     | POST ROOM           |                |
|    | PERCENT EXPENSE TO LABOR    | 80                   | 84.6    |                |                       |                     |                |
|    | ABNORMAL - LOSS             |                      | 195.33  |                |                       |                     |                |
|    | GAIN                        |                      |         |                |                       |                     |                |

37-10

Core Room Expenses May Be  
Classified as in Form 37-9



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### EXPENSE ANALYSIS

YEAR 1923

| DEPT.                                | FOR MONTH OF JANUARY |         |                | FOR MONTH OF FEBRUARY |        |                |
|--------------------------------------|----------------------|---------|----------------|-----------------------|--------|----------------|
|                                      | NORMAL               | ACTUAL  | PERIOD TO DATE | NORMAL                | ACTUAL | PERIOD TO DATE |
| 11 CLEANING DEPT.                    |                      |         |                |                       |        |                |
| FOREMAN                              |                      | 125.00  |                |                       |        |                |
| MISCELL. LABOR                       |                      | 50.00   |                |                       |        |                |
| SMALL TABLE                          |                      | 15.00   |                |                       |        |                |
| OIL & GREASE, WHITE                  |                      | 10.00   |                |                       |        |                |
| SAND BLAST SAND                      |                      | 25.00   |                |                       |        |                |
| GRINDING WHEELS                      |                      | 20.00   |                |                       |        |                |
| WELDING SUPPLIES                     |                      | 15.00   |                |                       |        |                |
| MISCELL. SUPPLIES                    |                      | 10.00   |                |                       |        |                |
| MAINTENANCE MATERIALS                |                      | 375.00  |                |                       |        |                |
| TOTAL DIRECT EXPENSE                 |                      | 31.00   |                |                       |        |                |
| 1 SHARE STEAM                        |                      | 60.00   |                |                       |        |                |
| 2 " POWER & LIGHT                    |                      | 20.00   |                |                       |        |                |
| 3A " T.E.M. LAB. & EXP.              |                      | 20.00   |                |                       |        |                |
| 3B " FILER CHARGES                   |                      | 253.67  |                |                       |        |                |
| TOTAL                                |                      | 239.50  |                |                       |        |                |
| 6 SHARE GENERAL FACTORY              |                      | 25.17   |                |                       |        |                |
| 7 " FOUNDRY                          |                      | 1036.00 | 910.75         |                       |        |                |
| TOTAL CLEANING EXPENSE               |                      | 700.00  | 700.00         |                       |        |                |
| DIRECT CLEANING LABOR                |                      | 131.00  |                |                       |        |                |
| PERCENT EXPENSE TO LABOR             |                      | 786.00  | 1819.75        |                       |        |                |
| TOTAL LABOR & EXPENSE                |                      | 2800.00 |                |                       |        |                |
| FOUNDER GOOD CASTINGS CLEANED        |                      | .00 36  | .00 36         |                       |        |                |
| COST PER POUND GOOD CASTINGS CLEANED |                      | .00 37  | .00 38         |                       |        |                |
| LABOR EXPENSE                        |                      | .00 63  | .00 52         |                       |        |                |
| TOTAL COST PER POUND                 |                      |         |                |                       |        |                |
| ABNORMAL - LOSS                      |                      | 171.18  |                |                       |        |                |
| GAIN                                 |                      |         |                |                       |        |                |

(37-11)

Classification of Expenses of the Cleaning Department Is Shown on Form 37-11

Form 37-12 Gives the Basis for Spreading the Cost of Annealing

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### EXPENSE ANALYSIS

YEAR 1923

| DEPT.                   | FOR MONTH OF JANUARY |         |                | FOR MONTH OF FEBRUARY |        |                |
|-------------------------|----------------------|---------|----------------|-----------------------|--------|----------------|
|                         | NORMAL               | ACTUAL  | PERIOD TO DATE | NORMAL                | ACTUAL | PERIOD TO DATE |
| 12 ANNEALING            |                      |         |                |                       |        |                |
| FOREMAN                 |                      | 125.00  |                |                       |        |                |
| MISCELL. LABOR          |                      | 50.00   |                |                       |        |                |
| SMALL TABLE             |                      | 15.00   |                |                       |        |                |
| PACKING MATERIALS       |                      | 60.00   |                |                       |        |                |
| PAINT                   |                      | 50.00   |                |                       |        |                |
| FUEL                    |                      | 60.00   |                |                       |        |                |
| MISCELL. SUPPLIES       |                      | 10.00   |                |                       |        |                |
| MAINTENANCE MATERIALS   |                      | 10.00   |                |                       |        |                |
| TOTAL DIRECT EXPENSE    |                      | 395.00  |                |                       |        |                |
| 1 SHARE STEAM           |                      | 11.41   |                |                       |        |                |
| 2 " POWER & LIGHT       |                      | 20.10   |                |                       |        |                |
| 3A " T.E.M. LAB. & EXP. |                      | 37.18   |                |                       |        |                |
| 3B " FILER CHARGES      |                      | 10.00   |                |                       |        |                |
| TOTAL                   |                      | 472.69  |                |                       |        |                |
| 6 SHARE GENERAL FACTORY |                      | 284.55  |                |                       |        |                |
| TOTAL ANNEALING EXPENSE |                      | 702.30  |                |                       |        |                |
| DIRECT ANNEALING LABOR  |                      | 600.00  |                |                       |        |                |
| TOTAL LABOR & EXPENSE   |                      | 1300.00 | 1302.30        |                       |        |                |
| TOTAL UNITS ANNEALED    |                      | 3000.00 |                |                       |        |                |
| POSSIBLE UNITS          |                      | 3500.00 |                |                       |        |                |
| PERCENT ACTIVITY        |                      | 85.7    |                |                       |        |                |
| ANNEALING COST PER UNIT |                      | .002    | .002           |                       |        |                |
| LABOR                   |                      | .002    | .002           |                       |        |                |
| EXPENSE                 |                      | .002    | .002           |                       |        |                |
| TOTAL COST PER UNIT     |                      | .004    | .004           |                       |        |                |
| ABNORMAL - LOSS         |                      | 102.30  |                |                       |        |                |
| GAIN                    |                      |         |                |                       |        |                |

(37-12)

The first method may well be used in a foundry where many kinds of cores are made. It requires reporting the time of the coremaker or the piece price for each core made, in order to determine the direct core making labor.

If the foundry makes, say, radiation only or automobile cylinders only, the core cost may be on the basis of good castings produced. If it makes a variety of castings which can be grouped in classes, the core cost per pound of all castings produced (good and bad) is determined, together with the loss by classification, to arrive at the core cost per pound of good castings.

The molding department expense analysis is shown on form 37-10. Molding sand is one of the most important items listed. It may seem logical to distribute its cost on the basis of the amount of metal poured, since more sand is destroyed through contact with molten metal than from any other cause.

The other items of expense, however, cannot be distributed on this basis, so an extra calculation would be necessary. It is seldom necessary to use more than one basis of expense distribution for a single department. If different methods of expense distribution seem necessary, the department should be carefully divided into two or more smaller departments, so that a more accurate basis may be determined.

Here we prefer to distribute the sand cost with the other items of molding expense. If the direct labor is the basis, it is assumed that the amount of sand used is in approximate proportion to the labor necessary to ram up the flasks. Granted that a small, complicated

pattern with backdrafts and undercuts will require more direct labor for a small amount of sand than would a large, simple pattern, requiring a greater amount of sand. But experience shows that the error involved by such variations is too small to worry about, when the big saving in clerical effort is considered.

In a jobbing foundry, the amount of molding labor must be reported for each job and a share of the department expense added to give the labor and expense cost. If the castings can be classified into a few groups the method is greatly simplified, because a pound cost can be determined for each classification. This application is quite correct and can invariably be applied where the molding is on a standard product, but with the general run of jobbing work few foundries will lend themselves readily to classification of castings and the method which will fit the local conditions best must be applied.

In a foundry where the helpers are employed continually with the same molders, their labor is unquestionably direct, but if molders' helpers serve molders, wheel in sand, etc., their labor is non-productive and therefore a part of the expense of the department. This simplifies the collection of labor costs and still keeps within the range of practical accuracy. Charging this labor to expense should not be done offhand, as it may lead to an unbalanced distribution of the expense. It is far better to re-classify the labor into definitely assigned tasks where possible.

If a foundry is so equipped that there are several classes of molding, it may be desirable to divide the

molding department into two, three or four sub-departments. If a large part of the product is made on molding machines which are served constantly by an overhead crane, this portion of the molding floor must be set up as a sub-department with the molding cost spread on the machine hour basis. Bench work, combined possibly with light floor work, should constitute another sub-department, and so on.

In a large plant the equipment of the cleaning department—form 37-11—may be so extensive and varied that it may be necessary to classify it and divide the department into sub-departments. The equipment may consist of a battery of rumblers or tumbling barrels, a battery of sand-blast units, a group of grinders and chippers, etc. The class of castings made will also affect the need for further sub-division of the cleaning department. If the castings are fairly uniform, subdividing the department may be unnecessary; but with a wide variety, several sub-divisions may be required. This is evident when we consider cleaning a 1000-lb. casting with pneumatic chipper and sand-blasting, possibly scratch brushing, requiring an hour's time as compared with a 300-lb. casting of a higher finish, with ornamental details, needing more careful handling, which also requires an hour's time to clean. If the rate per hour be 60c., the 1000-lb. casting would show a labor cost of \$0.06 per 100 lb. and the 300-lb. casting would cost \$0.20 per 100 lb. The malleable foundry would need separate departments for soft iron cleaning and hard iron cleaning.

The cleaning cost of a uniform product such as radiation or straight stove plate is comparatively simple, merely a total cleaning shop cost per unit per pound. It may be necessary, however, to consider breakage loss with the different classes of castings, and arrive at a cleaning cost by classification.

In the large foundry there is a better opportunity for classifying the labor so that it is grouped into definitely assigned units, but in small and even medium-sized foundries, it is not uncommon to find part of the cleaning shop labor used in the foundry to help pour off. When this is done, care should be taken to record such labor transfers so that the proper credit may be given to the cleaning department payroll and the amount charged to the miscellaneous labor in the molding department. This is not necessary when conditions permit organizing the labor into molding, pouring, shake-out and cleaning groups. It is the use to which labor is put which determines how and where the charge shall be made.

While in the typical gray-iron foundry which we are describing there would not, of course, be an annealing department, we shall describe the procedure in such a department for the benefit of those needing it, as it brings up some new and difficult problems.

To find a basis for spreading the cost of annealing as gathered on form 37-12, however, presents a problem very different from those which have been previously considered. Usually the cost of annealing is incorrectly determined.

Whether the product is uniform or varied, if it be found possible to pack the castings in the annealing pots so that a uniform packing weight of, say, 800 lb. can be regularly maintained, there is little question as to the reliability of the straight "cost per pound to anneal" basis. But if, because of variation in the class of castings annealed, it is impossible to maintain a uniform packing weight and the weight packed varies, say, from 500 to 800 lb. per pot, the cost per pound basis will not give correct annealing costs.

Let us show, first, the fallacy of the cost per pound basis. Assume that ten castings of one kind weighing 30 lb. each can be packed for annealing in each pot. The labor and expense for the month amounts to \$1,302.38, which for 300,000 lb. annealed, gives a cost per pound of \$0.00434.

Now, assume a second lot of castings weighing 30 lb. each, but of a shape and construction which will permit only five castings to be packed in one pot. That means that the same amount of space in the annealing ovens will accommodate but 150,000 lb. of castings with practically the same labor and expense. These castings may be more difficult to pack and require the

same amount of time as the first lot. The cost in this case will be \$0.00868 per lb. to anneal.

Let us now assume that we have filled the same annealing space with half of each lot of castings. In this case we can anneal:

First lot of castings.....150,000 lb.  
Second lot of castings..... 75,000 lb.

Total.....225,000 lb.

The cost will now be \$0.0058 per lb. to anneal.

This last cost figure is an average pound cost for the two lots of castings, but is not correct for either lot for it makes one lot of castings carry too large a proportion of the cost and the other too little.

The correct method is to give a unit value to each casting and spread the overhead at so much per unit.

The first lot can be packed 10 castings at 30 lb. each in a pot. We may, therefore, establish a "space pound unit" which makes each one of these castings represent 30 units. In the second instance, only five castings at 30 lb. each occupy the same space. Therefore, the unit for this lot of castings will be double, or 60 units per casting; 300 units of either casting can be packed for annealing in one pot.

The true cost of annealing is figured on the unit basis like this:

#### First Lot:

|                         |         |
|-------------------------|---------|
| Units per casting.....  | 30      |
| Units per pot.....      | 300     |
| Number pots placed..... | 500     |
| Total units .....       | 150,000 |

#### Second Lot:

|                         |         |
|-------------------------|---------|
| Units per casting.....  | 60      |
| Units per pot.....      | 300     |
| Number pots placed..... | 500     |
| Total units .....       | 150,000 |

|                         |         |
|-------------------------|---------|
| Total units placed..... | 300,000 |
|-------------------------|---------|

#### Unit Cost Calculation:

|  |            |
|--|------------|
| Total annealing labor and expense..... | \$1,302.38 |
| Total units annealed.....              | 300,000    |
| Annealing cost per unit.....           | 0.00434    |

Figuring the annealing cost for castings from the

#### First Lot:

|                                  |         |
|----------------------------------|---------|
| Castings, units each.....        | 30      |
| Cost per unit.....               | 0.00434 |
| Cost to anneal each casting..... | 0.1302  |
| Weight each casting.....         | 30 lb.  |
| Cost per lb. to anneal.....      | 0.00434 |

#### Second Lot:

|                                  |         |
|----------------------------------|---------|
| Castings, units each.....        | 60      |
| Cost per unit.....               | 0.00434 |
| Cost to anneal each casting..... | 0.2604  |
| Weight each casting.....         | 30 lb.  |
| Cost per lb. to anneal.....      | 0.00868 |

If the standard unit value of each casting is correctly determined the castings may be packed in any way, and the correct cost of each easily figured. The method will cover any foundry or any class of castings, without the necessity of classifying the castings. The cost should be determined on the basis of total units annealed, reporting with every heat the number of units good and the number of units bad, to arrive at a percentage of loss.

Most foundries operate a machine shop. If small, a single expense analysis only would be needed. If large, the machine shop would have to be divided into a number of departments. It would, in fact, require as comprehensive a cost system as does the foundry. Since we are in these articles describing only the method of determining foundry manufacturing costs we shall give no space to the machine shop. For the same reason we shall not discuss selling costs for they have nothing to do with manufacturing.

We have laid the greatest stress on the cost side of accounting. It should be noted, however, that the method described ties in with the general books of account. It is, in fact, merely an analysis of the figures developed by the accounting system in such a way as to throw light on costs.

We have not shown in detail how this system ties in. To do that would require a sizeable book rather than a few short articles. The method of combining the two methods should, however, be evident to any capable accountant. To tie in the costs to the general books is advisable for it gives a constant check upon the reliability of the cost figures.



# No Liberalization of Immigration Laws

Outlook Is That Congress May Tighten Present Provisions  
—Selective Methods Are Being Given  
Careful Consideration

WASHINGTON, Aug. 7.—Efforts looking to the liberalization of the 3 per cent immigration law apparently will be futile. While for a long time the sentiment of the country seems to have been directed against any further letting down of the bars, large employing interests have been urging that this is necessary if relief is to be obtained from the shortage of labor. Easily the iron and steel industry is one of the outstanding examples that typifies this situation. With plans now actively under way for the elimination of the 12-hr. day, the problem of the industry has become increasingly difficult. The fact may as well be faced, however, that no matter how plausible may be arguments to relax the immigration laws, every indication appears to point toward the improbability of such action by Congress.

## Selective Immigration Favored

The truth of the matter is that the tendency is toward tightening the law. There can be no doubt that industrial interests as a class have become thoroughly convinced of the need of selective immigration, though on a more generous basis than now is allowable, but running counter to this view is that of administration officials and many members of Congress, and President Coolidge is expected to continue the Harding policy on this question. Because of this it would be wide of the mark to charge propaganda of organized labor with complete responsibility for restrictive legislation enacted and which perhaps is in prospect. No doubt, it is pointed out, the active campaign that always has been carried on by organized labor for the limiting of immigration has been effective to a substantial degree, but likewise it is held to be true that organized labor found a strong public sentiment back of it in the past for a certain degree of restriction, though this does not imply that approval was given to the insistence of organized labor upon the so-called literacy test. Rather, it is maintained, the country as a whole saw that under previous laws many of the immigrants constituted a hodge-podge that was excessive in quantity but lacking in quality. It was contended that while this did afford a greater source from which to draw laborers, relatively the supply was small for either the factory or the farm, with the result that a large number of undesirables were thrown upon the country, many of them willingly disposed of by their native lands.

## Conference Board's Recommendations

The National Industrial Conference Board in a recent report on "The Immigration Problem in the United States" surveyed at great length the present 3 per cent law, in which it urged many far-reaching changes and improvements, but it went on record in favor of consideration of the human side of immigration and declared that a selfish economic attitude alone will not serve. It treated the subject from an extremely broad point of view and took into account national and international social questions as well as economic progress. It also pointed out that injustices and inconsistencies arising from imperfect administration should, if possible, be avoided in the future and went on to say that the State Department and Department of Labor do not work in harmony. It urged more careful selection through the issue of passport visés.

The report on these points appears to accord with recommendations of Secretary of Labor Davis, who now is abroad studying immigration law and with the report just made to the Department of Labor by Mrs. Muriel Lynch Crichton, who was sent to Europe by Secretary Davis to study details there. It is reported here that Secretary Davis since his arrival in Europe

has become even more firmly convinced than ever that the process of selection of immigrants to the United States should originate with American authorities abroad through visés of American consuls, rather than permitting foreign governments to permit indiscriminate emigration from their countries.

## Keeping Out Undesirables

Mrs. Crichton in her report made recommendations that are known to meet with the approval of Secretary Davis and which he is expected to attempt to have incorporated in law at the next session of Congress. She said that there must be a selective method of admitting immigrants to the United States to keep out a great many undesirables who could enter under the present quota plan of admission. She goes so far as to say that it appears "as if some governments are sending their social inadequates to the United States to avoid their custodial care." The present method of selection is also held to invite immigrants of a lower plane of intelligence than is necessary to American citizenship. She also points out that too often passports are viséd abroad only to have the alien denied admission at Ellis Island. The result is a hardship on all concerned. Mrs. Crichton favors the setting up of a clearing house abroad and suggests that it might be established at London, where all passports could be viséd and the fact definitely established whether or not the applicant would be admitted. It is the opinion of Mrs. Crichton that if there is any change in immigration legislation, it should be in the direction of tightening rather than relaxing requirements.

## Labor from the South

This is taken to reveal accurately the tendency toward the immigration problem. For this reason many iron and steel manufacturers and other employers have reached the point where they no longer are depending upon immigration from Europe as a source of any great labor supply. This already has caused them to turn to Canada, to which country the immigration law does not apply and also to the negroes of the South and to Mexicans. From these sources the iron and steel industry has to depend mostly on negro and Mexican labor, and there now has developed a large influx of these classes in the iron and steel plants. Curiously enough this class of labor, either native to the United States or at its threshold, is not as well understood by the iron and steel manufacturer of the North as is European labor. It is realized that this understanding involves a social study as to the characteristics of the negro and the Mexican and that before such labor can be brought up to the highest point of efficiency this understanding is necessary. Belief is expressed that these sources will prove to be progressively more important as sources of labor supply to it as time goes on and yet there are those who are inclined to think that both the negro and the Mexican will, unless understood and made satisfied in employment in the North, drift back to the South and Southwest. There has been a great deal of talk, but so far it has never gone beyond that stage, of ironing out the cycle of employment in the coal industry so that the number of employees engaged can be reduced and the surplus placed in the iron and steel and other industries. The iron and steel industry, also, of course, is constantly increasing mechanical efficiency and changing methods of compensation. These exertions on the part of the iron and steel industry manifestly have been due in large part at least to an anticipation that immigration laws not only will not be relaxed but will be tightened.





American Equipment Used in Handling Iron Ore at a Baltic Seaport in Sweden. The car dumper at the left dumps the ore into a transfer car which discharges it into bins at side of track. The bridge grab bucket carries it to storage piles under the bridge, or directly to a boat. The span of the ore bridge is 240 ft.; its overall length is 493 ft.

## EXPORTING ORE IN SWEDEN

### Bridge and Grab Bucket Loads Ore Into Vessels— American Equipment Used—Labor Saved.

American equipment has been adopted for handling Swedish iron ore in a new plant that was placed in operation recently at Oxelösund on the Baltic Sea, near Stockholm. This differs from the mechanical ore handling plants on the Lake Erie ports and at Eastern seaboard in that the equipment is used for loading ore into boats instead of unloading from the boats. The Swedish ore, which is of high iron content, is loaded into vessels of 5000 to 9000 tons capacity for shipment to the United States, England, Germany and other consuming countries. It is stated that this is the only plant in the world that uses a bridge and grab bucket for loading iron ore into vessels.

Shortly before this plant was completed the same interest installed a car dumper for handling ore at Narvik, Norway, 140 miles north of the Arctic Circle. This ore freezes in the car during a large part of the year, but it is stated that it does not freeze to the sides of the cars like American ore and it is dumped out in a solid mass when frozen, and is then broken up with hammers. As Narvik is an open port the year around, owing to the effect of the gulf stream, handling of ore at this point is not suspended during the winter months.

The ore handling plant at Oxelösund, Sweden, was built by the Brown Hoisting Machinery Co., Cleveland, for the Trafikaktiebolaget Grangesberg. The Cleveland company also erected the car dumper in Norway. The Swedish ore handling plant includes a car dumper and ore bridge, both generally similar in design to

equipment of this type used in this country, although the car dumper is of smaller capacity than those that are now being built for American use.

The ore is shipped in from the mines in 35-ton cars and from these the car dumper dumps it into a special side-dump transfer car of 50 tons capacity. The latter discharges the ore into bins at the side of a track near the dumper. From these bins the bridge and grab bucket take the ore direct to a boat or place it in storage piles under the bridge. The handling plant will be operated the entire year but the port is open only six months of the year so that during the winter months the ore will be placed in storage to await the opening of navigation. There is storage capacity for 300,000 tons of ore.

The ore bridge has a 240-ft. span and its overall length is 493 ft. At the water end there is an apron to raise and lower over the boat. The bridge is equipped with a man-riding trolley that handles a bucket of 10 to 15 tons capacity, which was especially designed for handling this ore, which is very hard and much of it is in large chunks, or from 6 to 24-in. cubes. Departing from the usual construction the bucket was made with forged teeth for grabbing the ore and it also has a special multiplication to provide greater closing power than is found in the standard type of grab bucket. The plant has a capacity of loading 5000 tons of ore in 10 hr. The entire plant is electrically operated and it requires only two men, an operator and an oiler to operate the bridge.

This plant replaces crude handling methods heretofore in use and is said to result in large savings in labor. Formerly the ore was shoveled by hand from cars on trestles, shoveled from the stock piles into tubs on cars, and the tubs were dumped into boats by means of small cranes.



Closer View of Swedish Ore-Handling Plant Showing Car Dumper, Transfer Car and Bins Into Which the Ore Is Dumped. The car dumper is of smaller capacity than those now being built for American use

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# THE IRON AGE

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## Still Under the Heavy Hand of War

The untimely death of our great-hearted President is to be reckoned as another of the losses the great war has brought to the American people. The years of readjustment have been in an especial way tragic years for the nation's chief magistrates. Much has been written in the past week of the increasing demands upon our Presidents and of strain beyond the breaking point imposed by duties that make the hours of their work-day nearer twenty-four than eight. But to all this there have been added in these past few years more problems and more difficult problems than any President has had to deal with in an equal period of peace time, not excepting the reconstruction days following the Civil War.

Patiently and with the highest devotion President Harding has given all that was in him to the tremendous tasks of readjustment. He was open to counsel from every quarter and never sought to compel others who were alike responsible to the people to bend to his will. But the war seems to have unfitted this people as well as the peoples of Europe for really human cooperation in the solving of its unparelled problems. Too many men—and the demarcation has not been on party lines—have been more willing to balk the plans of the Executive than to concede anything of their individual pre-judgments and allow a forward step to be taken.

Had there been such cooperation at home as was given by foreign governments in response to the Administration's appeal at the disarmament conference, the country today would be farther along in the solution of the problems that block its progress.

As it stands, the record of President Harding's administration is one that is destined to be more highly appraised as the people come to a better appreciation of the difficulties that were opposed. It will take time to sharpen the contrast between the President, who gave his utmost without thought of consequences to himself, and the organized blocs of various names which put self-interest above the common good.

"Let us reason together." Though he never

so phrased it, that may well stand as the message of President Harding to his countrymen, given in the same spirit that at the end of the Civil War prompted a great leader's "Let us have peace."

## Pig Iron and Steel Prices

The question has been asked, What effect will the steady decline of the past three months in pig iron prices have upon prices for rolled steel products? Rather too readily it has been taken for granted in some newspaper comments on the iron and steel market that the course of pig iron is shortly to be duplicated in finished steel. The reasoning apparently is that pig iron is the raw material of the steel maker and therefore that what brings down the raw material will affect in time the finished product in like degree.

As steel makers and most steel buyers know, relatively little of the pig iron that is bought in the market enters into steel. Foundries buy most of the blast furnace product that is made to be sold. Thus the state of the foundry industry has much to do with the demand for merchant pig iron and the price such iron brings in the market. Also, the size of the merchant iron output and its relation to the demand naturally have to do with determining the course of pig iron prices. As nearly all steel producers have their own blast furnaces, they have no direct interest in what foundries and a very few non-integrated producers of rolled steel pay for their pig iron.

There have been times when merchant pig iron, owing to the relation between the supply of such iron and the demand for it, has risen or fallen in price for some weeks, without a corresponding change in prices of rolled steel products. Thus the situation in the past three months—a decline in pig iron and a practically unchanged market for rolled steel—is not without precedent.

Usually the decision to blow out a merchant furnace is not quickly made. There is a stock of ore which it is desirable to convert into pig iron, or there is a connected iron mine to keep going, or there is the hope that the market will turn and



that the cost of stopping—and later starting again—as well as the laying idle of regular employees will be avoided. Some of these reasons have operated in recent months and much iron accumulated before the shutdowns that have now begun in earnest. On the other hand, the large steel companies can make fairly prompt adjustments of output to demand. They have done this in the past sixty days, as ingot production has dropped from a rate of 49,500,000 tons a year to one of about 41,000,000 tons a year. The putting in effect of the shorter day and the present state of labor supply will work against an increase above the existing rate of production.

The familiar fact that pig iron is really bought and that contract prices are not subject to revision presents a contrast with finished steel. A decline in pig iron does not affect business on the books except perhaps to postpone delivery. In steel the maker has a stake in holding prices, since a reduction might involve a much larger volume of sales already made.

Naturally the working out of the law of supply and demand will go far toward determining prices for finished steel in the next six months. The various factors in that situation call for more detailed statement in another article, though it may be said in passing that so far as this year is concerned, present indications are for a fairly stabilized market for rolled products. What is here emphasized is that the pig iron market is a product of causes which are not necessarily attended by like effects in steel.

### Steel Works Fact and Fiction

Rose C. Feld spent a night in the open-hearth building of the Gary steel works and later visited two Steel Corporation plants and one of an independent company in the Pittsburgh district. She wanted to know at first hand what the twelve-hour shift means to the workers. Judging from what she writes in the *New York Times*, Miss Feld is a capable woman and fair-minded. This latter attribute has been lacking in many who have attempted to solve the twelve-hour problem by denunciation.

One of the first surprises Miss Feld had was the sight of scores of workmen coming to the plant in automobiles driven by their wives. Another was the discovery she made as she went about watching operations that "the days when a man was stripped to the waist loading everything, carrying everything, pushing everything by hand, are gone." Probably a further surprise came in the information given her by the workers that the twelve-hour shift "isn't hard work, but you've got to be on the job." One of the workers, comparing his job with that of the housewife who doesn't stay steadily around the fire when the food is cooking, observed, "You've got to be around for twelve hours just to watch your pot. You can take a nap for a couple of hours; sure, you can. Your buddy will wake you if anything goes wrong. Just as long as you're there, it's O. K."

Miss Feld's four columns in the *Times* show quite aptly the difference between the facts about

steel mill work and the imagining of things that go on in a steel mill by critics who never go near.

Speaking of this latter class, we find in the *New York Herald* of Aug. 3 a letter from Philip Cabot, of Boston, who from that safe and serene outlook makes the wonderful discovery that if the steel works managers knew how to make their furnaces and workers really work, instead of loafing, there would be no twelve-hour problem. Thus:

In the case of a manufacturer whose administrative staff is old, somewhat ossified and largely automatic the increase in the number of hands and the increased rate paid per hour will increase his cost. But it is a matter of common knowledge that on the twelve-hour shift the men don't work twelve hours. They work about eight hours and loaf the rest, often with the full knowledge and approval of the foreman. He at least recognizes that men won't and can't work twelve hours. In the case, therefore, of the manufacturer whose staff is young, alert, imaginative and capable, ways will be found by better organization and planning of work to get as much work done in eight hours as was formerly done in twelve, so that although the wage rate be increased the labor cost will not rise. In some plants it will even go down.

What have the "old," "ossified" and "automatic" iron and steel metallurgists been thinking of all these years, from Sir Lowthian Bell on down, that they have allowed blast furnaces and open-hearth furnaces to loaf on their reactions? Lazy nature has been taking far too much time at blast furnaces for oxidation of coke, reduction of iron ore, decomposition of  $\text{CO}_2$  and decomposition of  $\text{CO}$ . With proper speeding up of these operations by a "young, alert, imaginative and capable" staff, why shouldn't there be three or four casts for every two that are got now; then workmen wouldn't be kept waiting between tappings, "with the full knowledge and approval of the foreman"!

And if the staff isn't sufficiently "imaginative," just call on Boston.

### The Farmer Problem Not New

In the comment in these pages last week on the effort of organized labor to get the farmers to make common cause with it, reference was made to the growing evidence that the farmers are not misled as to the real causes of their present unfavorable position. To speak specifically of the railroad phase of the problem, it will be recognized by the farmers that railroad wages are the important factor in high freight rates and that railroad wages have a connection with wage rates in the industries. It was shown in this department of *THE IRON AGE* of June 7 that in fixing rates railroad valuation counts for only three-eighths as much as the railroad payroll, a difference of 3.7 per cent in the payroll being equal in dollars to a difference of 10 per cent in railroad valuation or in the rate it is decided the railroads should earn on their valuation. This fact cannot always be concealed from the farmers, and that has a bearing on the permanence of the farmer-labor *rapprochement*.

It would appear that one of the things that make the solution of various problems of today difficult is a widespread impression that it is a new thing, growing out of the war, for us to have these particular problems, and that, therefore, perforce we must apply artificial remedies. It

is not a new thing for us to have problems and it is a fact that some of these derangements do settle themselves.

To go back to some of the things we saw and heard before the war: There was the propaganda of James J. Hill, a man of remarkable foresight, who argued that in a few years we were going to run short of wheat, which would go to a price we could not afford to pay. Probably Mr. Hill thought as clearly as one could think, and he certainly was well fortified with statistical facts as well as with close acquaintance with commerce. Yet today's problem is precisely the reverse. Our wheat producers cannot get enough money for their wheat.

Then there was the recurrent "back to the farm" cry. Every year or two we were being ruined by too many farmers becoming factory or other kinds of workmen. We were going to have more town workmen than we could employ or pay decent wages to, and foodstuffs were going to be so high priced that workmen could not buy them.

Nor is it only since the war that we have been exercised unduly over national problems. Three years before the war we were much excited over reciprocity with Canada. The opponents insisted we were giving everything to Canada. Finally reciprocity won in the United States but—Canada rejected the alleged gift.

Some of these recollections should move us now to avoid growing pessimistic over our problems. We must do what we can, diligently and methodically, to improve matters, but none should be filled with fear that we are going to be overwhelmed with a flood of economic retribution. We are going to get through.

### Standardizing and Diversifying

For years there have been two trends in rolled steel and other mill products, one in the direction of increasing the number and one in the direction of decreasing it. The latter trend is the newer.

The matter is of more importance than is ordinarily recognized. Few men realize how many different things the group of works comprising what is commonly called "the steel industry" really makes. Frank Baackes, vice-president of the American Steel & Wire Co., testified in the Pittsburgh Plus case that his company makes 30,000 different things. There are more than a score of different kinds of two-inch pipe. In merchant bars there are variations in shape, width and thickness. Though the statement is not precisely accurate, it is roughly indicative to say that in sheets the number of commodities is the continued product of five factors—the number, respectively, of gages, widths, lengths, analyses of steel and surface finishes. All gages are not made in all widths, nor all finishes in all lengths, but the reference is suggestive.

Some products are familiar to some men and entirely strange to others—jail bar, for instance. There is a nail known as a blued nail, which has been sterilized so that lathers may keep a supply in the mouth.

Altogether, it is probably a fair and certainly not a ridiculous guess that "the steel industry" makes 150,000 to 200,000 different things.

On the one hand, steel enters into almost all kinds of work. It is to the advantage of the users and therefore of the public that the use of steel be facilitated, that steel be furnished in such form as will best serve the numerous and diversified needs of the public. At the same time the rendering of such service is beneficial to the steel industry, helping its growth. On the other hand, unnecessary diversification involves an economic loss which some one, the general public in the last analysis, must pay, in higher cost of manufacture and expense of maintaining individual stocks.

There is an old story of a tribe in Africa which had a word for a cow's tail, another for a horse's tail, and so on, but had been unable to generalize and coin a word simply for "tail." In the current number of *World's Work* Donald MacMillan tells of his little Eskimo instructress giving him names for holes in various things but denying that there could be a generic name, for if there was a hole it had to be a hole in something.

Of course we are much more enlightened than the Africans or the Eskimos; but it has been found that a steel rail is not exactly a steel rail. It is this road's rail or that road's rail, and the same with the intricate piece of mechanism that holds the rail to the tie, known to the uninitiated as "a railroad spike" but to the trade as this engineer's notion of a spike or that engineer's idea of what a spike ought to be. In the agricultural implement works there are likely to be beams and beams, one being a harrow beam, another a plow beam, and so on, when in many cases the diversification is due chiefly to each implement being in charge of a different engineer.

Along such lines as these there has been room for simplification or standardizing, and some good results have been accomplished, but there is room for much more. The various societies have done good work but have much before them.

In the other direction, the possible new customer of the steel industry receives a much more patient hearing than used to be accorded him. The old attitude was: "Here are our sections; which do you want?" The new attitude is: "What is your problem?"

## COMING MEETINGS

### August

**American Institute of Mining and Metallurgical Engineers.** Aug. 20 to 30. Quebec, Canada. F. F. Sharpless, 29 West Thirty-ninth Street, New York, secretary.

**Lake Superior Mining Institute.** Aug. 29, 30 and 31. Twenty-third annual meeting, Hotel Spalding, Duluth, Minn. A. J. Yungbluth, secretary.

### September

**Chemical Industries.** Sept. 17 to 22. National exposition, Grand Central Palace, New York.

**Association of Iron and Steel Electrical Engineers.** Sept. 24 to 28. Convention and exhibition, Auditorium, Buffalo. J. F. Kelly, 1007 Empire Building, Pittsburgh, secretary.

**American Electrochemical Society.** Sept. 27 to 29. Annual meeting, Dayton, Ohio. Dr. Colin G. Fink, Columbia University, New York, secretary.



# German Market Chaotic as Mark Falls

Figures Doubled in Effort to Maintain World Prices—  
Central European Iron and Engineering Works Busy  
—Exchange Trouble and German Industry—  
Payment According to Index Extending

(By Radiogram)

BERLIN, GERMANY, Aug. 6.—New prices, to offset the fall in the gold value of the mark, have been announced for iron and steel items. The Pig Iron Association has advanced the price of foundry iron No. 1 to 26,220,000m. per metric ton (\$11.99 per gross ton, at 45c. per 1,000,000m.) from 12,960,000m. (\$12.51 at 95c. exchange) last week and 4,787,000m. for the two previous weeks (\$10.21 on July 23 and \$20 on July 16).

Steel ingots have been pegged by the Stahlbund at 31,968,000m. (\$14.62), compared with 18,750,000m. (\$18.10) last week, and with 7,630,000m. (\$16.28) two weeks ago.

Steel bars have jumped to 46,250,000m. (0.94c. per lb.), compared with 18,750,000m. (0.81c. per lb.) last week and with 10,995,000m. (1.05c. per lb.) two weeks ago.

Thin steel sheets have been advanced to 77,102,000m. (1.57c. per lb.) from 31,257,000m. (1.35c. per lb.) last week and with 18,149,000m. (1.73c. per lb.) two weeks ago.

BERLIN, July 24.—In the endeavor to retard the advance of foreign currency against the mark, the Reichsbank is rationing the amounts it supplies to the other banks. The orders have, however, grown to such an extent now that the Reichsbank threatens to take strong action. On one day it went so far as to allot generally only  $\frac{1}{4}$  per cent and gave as the reason that the amounts ordered were in excess of the requirements of the industry. Some import lines, especially for foodstuffs, have received preferential treatment in this respect, in order to insure sufficient foreign supplies. There have been negotiations between the Reichsbank and the other banks to adjust the differences. The authorities are also taking action to insure a greater handing over of part of the incoming foreign exchange to the Reichsbank.

The rationing of foreign exchange has a strong influence on the import trade and has in some industries led to more rigorous terms of payment. Bills are not accepted, as some banks refuse to discount them, and the paper mark cheques are reckoned up to their amount in dollars on the day they are credited by the bank. All inland payments have still to be made in marks but, owing to the forced higher Berlin mark exchange, trade and industry are reckoned with the New York parity instead of the Berlin Bourse on all new contracts. On account of the latest exchange policy of the Reichsbank, some traders in raw material are even reckoning up the paper mark payments of their customers only in relation to the percentage of foreign currency they are able to procure. This of course creates chaotic conditions, as it is impossible to foresee when the full amount will be allotted and at what exchange. A calculation of the ultimate cost is thus almost impossible.

Coal is still rising and iron and steel prices are advanced every few days. The railroad is also increasing the freight rates by 150 per cent on Aug. 1. The large changes that are taking place are reflected also by the development of the various price indices. During the third week in July the cost of living index, for instance, was 28,892 (1914 = 1) which is an advance of 34.3 per cent against the previous week or of 278 per cent compared with the June average. This index,

which is now published every week, is extensively used, not only in determining the advance in wages and salaries, but also as a factor in adjusting prices, fees, etc. According to an order of the Minister for Economic Affairs (Reichswirtschaftsminister) official fees are now to be determined by multiplying the pre-war fee with the cost of living index.

## Inland Payments in Foreign Exchange

The minister has also issued another order which constitutes a change in the policy of the Government in regard to payments in foreign currency for goods sold to a German customer. The situation created by the rationing of foreign exchange having become a danger to German trade and industry, it is now intended to alleviate this by allowing the exchange received by exporters to be utilized for direct payments to the manufacturer, who has to pay for imports in foreign currency. The order is to remain in force until Aug. 15, and refers only to goods made with foreign material and only to the wholesale trade.

The seller is under the obligation to give the exchange received within two weeks either to the Reichsbank or to an importer who has to be named on a special certificate. The customer has to send this certificate immediately to the Foreign Exchange Office (Devisenbeschaffungsstelle), which controls these transactions. The seller is, however, not entitled to demand such payments, nor can the customer buy foreign exchange for that purpose. The order does not affect the obligation of exporters to hand over part of their received exchange to the Reichsbank.

## Mergers Reported

It is reported on good authority that the Linke-Lauchhammer concern is increasing its influence in western Germany by taking a large interest in the Düsseldorf Eisenbahnbedarf Carl Weyert & Co. (railroad supplies). The linking up of Weyert & Co. would serve as an extension of the car factory of P. Herbrand at Köln-Ehrenfeld (Linke concern) where necessary extensions could not be made, for want of space.

The Badische Motorlokomotivwerke and the Karlsruhe Maschinenbau Gesellschaft (engineering works) have concluded a contract for the joint manufacture of motor locomotives with the hydraulic Lentsch gearing for the time these patents are running. The motor works will specialize in the manufacture of the gearing and the Karlsruhe works in the locomotives. The Uerdingen car shop and the Rheinische Stahlwerke are contemplating a merger.

## Idle Works in Ruhr

Reports from the Ruhr district state that large sections of the Krupp works are forced to idleness owing to the requisitioning of their coal by the French. The tire mill, the foundries 2 and 3, and the open-hearth works 7, the largest of the Krupp steel works, have had to stop operations. The coal supplies of the Bochumer Verein für Bergbau und Gusstahlfabrikation were also stopped and work had to be suspended. The 20,000 workmen here are employed on emergency work.

Two Austro-Russian companies have just been established to redevelop the trade between the two countries. Prior to the war Russia was one of the principal customers of some of the products of the Austrian iron and engineering industry, especially agricultural machines and implements. The Soviet



Government holds 50 per cent of the shares of these companies; 75 per cent of the capital is paid in by the Austrian partners, and the rest is successively paid by the Soviets out of the profits, of which they receive more than 50 per cent. The Austro-Russian Syndicate, which is financing the companies, is also giving a credit of \$1,000,000 to the Soviets. Through these companies there is now the possibility of extensive exports of hardware goods, machines, rolling stock and motor cars from Austria to Russia. The Syndicate includes a number of well-known engineering firms.

#### Business Good in Poland

The Polish iron and engineering industry is at present well booked with orders, and a great number of engineering firms, especially those producing textile machinery, are mainly working for export. The pre-war production has been exceeded and from the Bielitz district, for instance, 75 per cent of the production is exported. The iron works in Poland are to a great part depending on East Upper Silesia for their pig iron. The works in this district have, however, hardly been able to produce enough for their own requirements, and there has at times been considerable scarcity in other parts of the country.

Numerous new companies have been founded in Polish Upper Silesia. Not only German companies

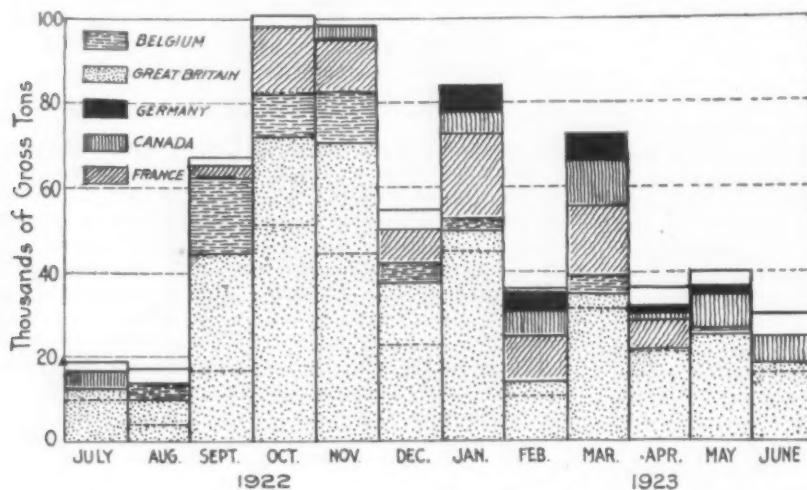
having works on both sides of the new German-Polish frontier are establishing new companies on the Polish side, but other foreign capital is also showing considerable activity. Nearly a thousand new joint stock companies have been established during recent years in Poland. The Stinnes concern is also busy in further extending its influence here, but it is reported that legal measures are contemplated to restrict his activities. He seems to use his foreign connections now, which do not fall under the restrictions of the Versailles treaty. He is also endeavoring to gain control of the Oberschlesische Eisenbahnbedarfs Gesellschaft, but it is said that the Polish Government intends to take actions against the numerous non-German firms controlled by Stinnes.

It may be recalled in this respect that this concern acquired the majority of the Upper Silesia Bismarkhütte and the Kattowitz Bergbau Gesellschaft a few weeks ago, linked them up with the Königs and Laura Hütte and transferred the shares to the Austrian Alpine Montangesellschaft. The latter transaction brought him into closer contact with the Austrian Bosel-Weinmann group, which controls the Skoda munition works, Pilsen. The French concern of Schneider-Creuzot is also interested in the Skoda works, which thus form one of the links between the French and the German concerns.

## The Great Pig Iron Inflow of 1922-1923

FINAL figures of the Department of Commerce show imports of pig iron in the fiscal year ended June 30 aggregating 655,286 gross tons. The seven months from Sept. 1 to March 31 provided an inflow of 513,185 tons, an average of 73,313 tons per month. The highest month (on the face of the returns) was 120,779 tons for October. As this included the last nine days in September, the imports in October alone were probably close to 100,000 tons.

In the diagram the monthly imports are shown, together with the countries from which the greatest amounts came. Blank space at top of each month indicates scattering amounts from countries not mentioned. In the space devoted to Great Britain, the dotted line separates imports from England (below) from those emanating from Scotland (above the dotted line).



Although the Import Figures Reported from Washington Show September Tonnage at 46,839 and October at 120,779, These Represent Only Three Weeks of September in the One Case and the Period from September 22 to October 31 in the Other. In the chart, allowance is made for this, September being plotted as 66,900 tons and October as 100,718 tons

### Imports of Pig Iron into the United States

(Gross Tons)

| Source        | 1922   |        |        |         |        |        | 1923   |        |        |        |        |        | 12 months ended June, 1923 | First six months of 1923 | Source        |
|---------------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|----------------------------|--------------------------|---------------|
|               | July   | Aug.   | *Sept. | †Oct.   | Nov.   | Dec.   | Jan.   | Feb.   | March  | April  | May    | June   |                            |                          |               |
| England       | 9,998  | 3,975  | 11,471 | 56,536  | 44,531 | 22,582 | 44,816 | 10,710 | 30,958 | 21,224 | 25,116 | 16,050 | 297,967                    | 148,874                  | England       |
| Scotland      | 2,750  | 6,050  | 19,600 | 28,715  | 25,993 | 14,635 | 4,951  | 3,100  | 3,870  | 250    | .....  | 2,100  | 112,014                    | 14,271                   | Scotland      |
| Great Britain | 12,748 | 10,025 | 31,071 | 85,251  | 70,524 | 37,217 | 49,767 | 13,810 | 34,828 | 21,474 | 25,116 | 18,150 | 409,981                    | 163,145                  | Great Britain |
| France        | 400    | 1,854  | 2,100  | 17,017  | 12,548 | 7,770  | 19,974 | 10,744 | 16,566 | 6,789  | 132    | .....  | 95,894                     | 54,205                   | France        |
| Belgium       | 766    | 3,788  | 12,448 | 15,777  | 11,875 | 4,760  | 2,964  | 700    | 4,104  | .....  | 1,525  | .....  | 58,707                     | 9,293                    | Belgium       |
| Canada        | 4,064  | 846    | 1,191  | 2,134   | 3,818  | 942    | 5,037  | 5,898  | 10,455 | 1,539  | 7,787  | 6,505  | 50,216                     | 37,221                   | Canada        |
| Germany       | 150    | .....  | .....  | 500     | .....  | 2,004  | 6,138  | 4,242  | 6,091  | 1,369  | 2,000  | 150    | 22,734                     | 19,990                   | Germany       |
| British India | .....  | .....  | .....  | .....   | .....  | .....  | .....  | .....  | .....  | 1,000  | 3,025  | 4,678  | 8,703                      | 8,703                    | British India |
| Cuba          | .....  | .....  | .....  | .....   | .....  | .....  | .....  | .....  | .....  | 4,100  | .....  | .....  | 4,100                      | 4,100                    | Cuba          |
| Netherlands   | .....  | 592    | .....  | .....   | .....  | 1,945  | .....  | .....  | .....  | .....  | .....  | .....  | 2,537                      | .....                    | Netherlands   |
| China         | 500    | .....  | .....  | .....   | 2      | .....  | .....  | .....  | .....  | 100    | 100    | 550    | 1,252                      | 750                      | China         |
| Sweden        | 200    | .....  | 29     | 100     | .....  | .....  | 55     | 100    | 300    | .....  | 79     | .....  | 863                        | 534                      | Sweden        |
| Austria       | .....  | .....  | .....  | .....   | .....  | .....  | .....  | 299    | .....  | .....  | .....  | .....  | 299                        | 299                      | Austria       |
| Total         | 18,828 | 17,105 | 46,839 | 120,779 | 98,767 | 54,728 | 83,935 | 35,793 | 72,344 | 36,371 | 39,764 | 30,033 | 655,286                    | 298,240                  | Total         |

\*Until Sept. 21 only.

†Sept. 22 to Oct. 31.

Careful estimates place the total for September at 66,900 tons; for October, at 100,718 tons (See THE IRON AGE, June 14, page 1717).

## MORE FOREIGN INQUIRY

### Chinese Inquire for Sheets, Tin Plate and Wire Shorts and Japanese for Black Sheets— British Prices Lower

NEW YORK, Aug. 7.—What is probably a temporary improvement in buying has been evident from Chinese merchants, and Japanese merchant inquiry has also revived slightly in the past week. Chinese buyers continue active in purchases of wire shorts and the surplus of shorts that was being offered for export in the United States a few weeks ago, as a result of the Chinese refusal to pay the prices asked, has apparently been considerably reduced. Besides wire shorts, Chinese buyers are inquiring for some tin plate and for small lots of corrugated, galvanized sheets in crates. One exporter dealing with the Far East reports a recent order for 1000 boxes of 14 x 20 in. tin plate, of 100 and 118 lb. weight. Despite this revival of activity in buying by China, exporters generally consider it only temporary in view of the unsettled political conditions.

Japanese merchant inquiry has also shown a slight improvement in the past week, but few orders have as yet been booked. The present activity is largely for light gage black sheets, and a number of inquiries is reported ranging from 50 tons to 300 tons. One Japanese export house reports an order for about 100 tons. At present the sheet market in Japan shows slight signs of improvement but prospects of transacting any large business at present are considered somewhat remote by Japanese purchasers, as shipments of black sheets from the United States, purchased several months ago at about \$95 per ton, c.i.f. Japan, are beginning to arrive, while the present American market price is said to range from \$106 to as high as \$115 per

ton, c.i.f. Japanese port, with British prices far lower.

A part of the present interest in American sheets is attributed to the fact that many of the British mills which have been supplying tonnages for the past few months are unable to promise early enough delivery, although their prices are still several dollars under the American market. British sellers of tin plate are also quoting lower prices, the American quotation generally averaging about \$6.40 per box, c.i.f. Japan, compared with the British price of about \$6 per box. On the recent order of the Nippon Oil Co. of 18,000 boxes, which was awarded to a British maker, it is stated that the maker promised that the quality of the tin plate furnished would be improved by using one pass cold-rolled sheets for tinning. That this will eliminate all difficulties is apparently doubted in some quarters, as it is claimed that one of the principle objections to Welsh tin plate has been brittleness when used in making cans.

In addition to the merchant inquiries for black sheets that are pending there is the tender of the South Manchuria Railway Co., for furnishing 130 sets of manganese steel frogs and switches and a tender from the City of Osaka for 30 sets of frogs and switches for the municipal tramways. No inquiries of any size for rails are reported.

Foreign pig-iron continues too high to be profitably imported at the present domestic market. A recent quotation on an English foundry iron analyzing about 3 per cent sil., 0.05 sul., 0.5 phos. and 0.5 to 1 per cent mang. was \$28.50 per ton, c.i.f. North Atlantic port, duty paid. The uncertainty of political conditions in Europe is somewhat of a deterrent to lower quotations by French and other Continental furnaces, but importers are continuing negotiations for continental iron and claim that there is a possibility that lower prices may be obtained before long.

## FRENCH MARKET QUIET

### Pig Iron Production Increases, but Coke Situation Still Acute—Prices Firm

PARIS, FRANCE, July 27.—The market continues unchanged, awaiting future developments. Prices are maintained, no increase being noted except for pig-iron and semi-finished material. Domestic demand has increased slightly. The general industrial situation is greatly influenced by the international complications, and, although a greater development of export trade is permitted by the low value of the franc, this is offset by the increased cost of raw materials and machinery, which must be purchased in countries with high exchange.

Prices are strong, partly because demand is heavier and partly because the coke price is to be increased 5 fr. per ton from Aug. 1. Moreover, there is some doubt that coke stocks will be satisfactorily refilled in the fall.

**Coke.**—From July 1 to 12, 44,000 tons of coke were received from the Ruhr and from July 12 to 20, 12,000 tons. The weakness of arrivals is attributed not to a scarcity of supplies but to the slow operations in getting them out of stock. Should this situation continue, the July total will only be 80,000 tons, or half the June deliveries.

As a result of the slight increase in the cost of German coke and French coke (made from British and Dutch slacks) it has been decided to increase the per-equation price 5 fr. per ton for August. The maintenance for August of the minimum percentage of distribution of July (that is 55 per cent of the entire works consumption) could not be undertaken because of re-stocking supplies. Nevertheless, it is hoped that an average of 40 to 50 per cent can be reached.

**Iron Ore.**—Pig-iron production having been increased, consumption of iron ore is larger, but still on a rather small scale. However, exports have been good, especially to Belgium.

In South Wales, tests of recent shipments in Briey iron ore are being continued; it is reported with satisfactory results. Imports by Scotland of Briey iron ore have been reduced to practically nothing as a result of

the stoppage of industry. Transactions with Middlesbrough have also ceased.

No business is contemplated with the United States until the time that French requirements in coal have become so urgent that imports from America must be resumed. Prices continue on the same level: Briey ordinary (35 per cent of iron) is quoted at 15 to 16 fr., according to tonnage involved.

**Pig-Iron.**—The pig-iron output is increasing slowly. Consumers until recently have not been able to place any contracts, August quotations not being known. There is a slight change in the prices for domestic transactions: No. 3 P. L. varies from 390 to 420 fr. per ton at works, according to the area. Offers from Lorraine works are few; 390 fr. (French currency) was quoted in Antwerp for chill cast foundry pig-iron No. 3, and 385 fr. for ordinary basic pig-iron. In hematite pig-iron, 420 to 440 fr. is quoted at furnace. British hematite pig-iron is quoted c.i.f. Antwerp at 110s. and about 500 fr. in the Parisian area, a difference of 50 fr. with the French product. Consequently, transactions in British hematite pig-iron are rare.

**Semi-Finished Material.**—Business is more active in semi-finished products, some fairly large orders having been booked. The following prices for domestic trade are generally quoted per 100 kg. on basic material:

|               | Fr.      |
|---------------|----------|
| Ingots .....  | 45 to 48 |
| Blooms .....  | 48 to 52 |
| Billets ..... | 53 to 55 |
| Targets ..... | 55 to 57 |

Lorraine works have quoted blooms, f.o.b. Antwerp (Belgian currency) at 600 fr. and billets at 625 to 635 fr.

**Beams.**—Demand from the building trades is small. Former prices, 56 to 57 fr. per 100 kg., base, at works, are still maintained. For export, Lorraine beams are quoted at approximately £7 10s. per ton, which is 585 fr. (French currency) f.o.b. Antwerp.

**Rails.**—Very few transactions are reported. An order for 2000 tons of 55-kg. sections has been awarded to the Société Normande de Métallurgie by the State railroads, at 539 fr. per ton, delivered Batignolles.



**Rolled Products.**—Prices continue firm, but demand has not improved. Works refuse to accept contracts for delivery after August. Prices range from 57.50 to 61 fr. per 100 kg. at works. For export, f.o.b. Antwerp, Lorraine bars have been offered at 610 fr. (French currency) or 740 fr. (Belgian currency).

**Sheets.**—Inquiries have been made for sheets, and a few orders are reported, but prices are unchanged. The following prices per metric ton are quoted by Lorraine mills:

|              | Fr.          |
|--------------|--------------|
| Heavy .....  | 640 to 700   |
| Medium ..... | 800 to 850   |
| Light .....  | 900 to 1,000 |

### Indiana to Join Fight on Pittsburgh Plus

Governor W. T. McCray, of Indiana, has authorized U. S. Lesh, attorney general, to confer with the attorneys general of other Middle Western States who are planning to appear before the Federal Trade Commission in the interests of the abolition of the Pittsburgh base method of selling finished steel. The governor stated that he was opposed to the Pittsburgh base practice, but that Indiana's cooperation in an effort to stamp out that method would depend on Mr. Lesh's report on the conference. Both houses of the 1923 Indiana legislature passed concurrent resolutions voicing opposition to the "Pittsburgh plus" plan, but owing to the failure of the resolutions to be sent forward for engrossment, they do not appear in the published acts of the year.

Almost coincident with Governor McCray's action was the organization of an executive committee to represent the States of Illinois, Wisconsin, Iowa and Minnesota in the preparation of evidence to be presented before the Federal Trade Commission. The body, which was formed at a meeting held at Chicago, includes the following: B. S. Baker, treasurer, Kewanee Boiler Co., Kewanee, Ill., chairman; Herman L. Ekern, attorney general of Wisconsin, secretary; Ben. J. Gibson, attorney general of Iowa; Clifford S. Hilton, attorney general of Minnesota; Robert Scholes, Peoria, Ill., attorney and State representative.

The discussion at this meeting largely concerned the effect of Pittsburgh plus upon the farmer. Burton F. Peek, vice-president Deere & Co., Moline, Ill., and a member of the War Industries Board during the war and chairman of the Industrial Board in 1919, presented statistics to show the increased cost of farm machinery attributable to the Pittsburgh base practice. These figures were tabulated when the freight rate between Chicago and Pittsburgh was \$7.60 a ton instead of \$6.80 as at present, and he asserted that they should accordingly be reduced.

His statistics were as follows: Riding cultivator, \$1.23; mower, \$1.28; disk harrow, \$1.89; corn planter, \$1.93; sulky rake, \$2.60; grain drill, \$3.06; gang plow, \$3.61; tractor plow, \$6.26; corn binder, \$6.88; grain binder, \$6.98; tractor, \$19.80.

### Farmers' Meeting in Salt Lake City Against Pittsburgh Plus

At a meeting held at Salt Lake City, Utah, last week, the Western States Region of the American Farm Bureau Federation indorsed the fight being waged against "Pittsburgh plus" and decided to ask the governors of the respective states included in the region to instruct their attorneys general to join with mid-west attorneys general at a meeting which will be held at Chicago in September for the purpose of formulating a plan of action for intervention in the case now before the Federal Trade Commission. The date for this meeting has not yet been set and no invitations have yet been sent out. Governor Mabey of Utah has already authorized the attorney general of that State to participate in the conference. The Western States Region of the American Farm Bureau Federation comprises all states west of and including Montana, Wyoming, Colorado and New Mexico.

### Chairman Topping Regards Steel Trade Prospects as Favorable

*The Magazine of Wall Street* will have in its issue of this week an interview with Chairman John A. Topping of the Republic Iron & Steel Co. He says that both business sentiment and demand have improved in the past month and further improvement seems probable. Steel operations for July were in excess of expectations, the volume of orders having exceeded the total for June.

"Aside from the encouragement of an improved demand for iron and steel, general business, measured by the usual trade indices, also shows continued activity, as is evidenced by the trade reports of the mail-order houses and retail stores and railroad reports of freight-car loadings, all of which indicate that consumption has not been materially affected."

In spite of the Ruhr situation, Mr. Topping takes a hopeful view of the business outlook here, seeing there is no unemployment, but rather a scarcity of labor; that wages are high and the purchasing power of the people not seriously impaired. He considers business fundamentals no less sound than they have been. "In fact, conditions have improved rather than otherwise, inasmuch as crops were in prospect during the first six months of the year, whereas now crop figures can be more accurately measured by the harvest under way. Money is cheap and abundant, speculation in the commodity markets is absent, stocks are normal and in some cases sub-normal."

As to the steel industry, operations are close to 80 per cent of capacity, and under existing conditions of labor supply, taken in connection with the elimination of the 12-hr. day, no increase in output beyond this level can be reasonably expected. This change in working schedules by the iron and steel works of the country, notwithstanding statements to the contrary, will mean an increase of substantial proportions in cost of production, and ultimately these increases in cost must be reflected in selling prices.

As heretofore, industry generally will continue its efforts to lower costs by the introduction of any device or process suggestive of greater economy or saving in labor, but in view of the strides already made in this direction by the steel industry in particular, it is not likely that sufficient additional labor-saving devices can be brought into use to more than partly offset increased cost, and it will require time and study to accomplish this.

Mr. Topping considers that the present restrictions on immigration produce a serious problem. "Unless relief is soon granted our resources cannot be fully developed, nor can the requirements of the country be met for increased production in all directions."

### Increased Stocks of Pig Iron in Alabama

BIRMINGHAM, Aug. 7.—Stocks on Alabama blast furnace yards increased 35,000 tons in July owing principally to hold-up orders. Stocks on yard July 1 and Aug. 1 were: Foundry, 29,000 and 57,000 tons; machine cast, 5600 and 12,000 tons; warrants, 800 and 1500 tons; basic, 13,000 and 13,200 tons; total, 48,000 and 84,000 tons.

The Equitable Equipment Co., Inc., 411 Whitney-Central Building, New Orleans, has completed a purchase from the Santa Fe Railroad of approximately 16,000 tons of relaying rails, varying in size from 52 to 60 lb.

A 10-ton ore handling bridge will be installed at Ougree, Belgium, for the Societe Anonyme d'Ougree-Marihay, by the Brown Hoisting Machinery Co., Cleveland. It will have a 110-ft. span and an overall length of 214 ft.

The Tropenas Co., 25 Broadway, New York, has been awarded the gold medal for its exhibition of side-blow converters at the Rio de Janeiro Centennial Exposition.



## ASSIGNED COAL CAR CASE

### Petition to Reopen Made by Youngstown Sheet & Tube Co.

WASHINGTON, Aug. 7.—Reopening of the assigned car case was asked of the Interstate Commerce Commission in a petition of the Youngstown Sheet & Tube Co., Youngstown, made public yesterday. Like other steel interests owning private cars to haul its coal, the Youngstown Sheet & Tube Co. strongly urged reopening of the case and there is a growing belief that the request which has been made with great earnestness will be granted.

The Sheet & Tube petition points out that the company owns approximately 10,500 acres of coal land in Pennsylvania and 4500 acres of coal land in West Virginia and owns 1300 standard steel hopper bottom coal cars. It is maintained that the effect of the order of the commission will be to deny to the company absolutely the use of coal cars to the extent that the placement of cars at its mines will exceed the pro rata share of railroad system cars to which other mines in the same district shall be concurrently entitled.

"In no other instance in the entire history of the regulation of interstate commerce by the Interstate Commerce Commission has so important an order so vitally affecting important interests of shippers or receivers of traffic been made upon a record so devoid of evidence disclosing the circumstances and conditions of the transportation, traffic and business affected," says the petition.

The petition says that the company considered it unnecessary to ask for a hearing when the question was taken up originally because no attacks had been made against the propriety of the use of privately owned cars and that also the investigation was made upon the commission's own motion.

Replies of coal interests combat requests made by

railroads and owners of private cars for a reopening of the case. Opportunity was afforded, the Southern Ohio Coal Exchange attorneys said, for everyone to come forward and present evidence that bore upon the matters under investigation, including private cars.

"We submit that under such circumstances the prayers of these great corporations for an opportunity to present merely cumulative evidence on the subject of private coal car ownership is a belated wail, and not worthy of serious consideration by the commission," says the Southern Ohio Coal Exchange answer. "Private car owners, as a whole, were adequately represented at the hearing, on brief and in argument. On the brief filed in behalf of private car owners and considered by the commission, the names of 19 companies owning private cars appear, and in the aggregate they own about 16,000 private coal cars. On argument counsel stated that the total investment by the companies he represented was not less than \$30,000,000. In addition to this counsel for private car owners was heard before the whole commission and at that time presented reasons similar to those now urged in a petition for rehearing. There is nothing presented in any of the petitions which supports the conclusion sought to be established that the case was submitted on an incomplete or insufficient record. We submit that the commission was advised by evidence of record why private car owners made their investment in such cars. The expenditures were made to insure the owners of a regular and adequate supply of coal without regard to the condition of the car supply generally.

"With the private cars they became preferred shippers of coal. Because of their ability to make the investment they had and have an undue advantage over a shipper unable to make such investment.

"As we read them, there is not a suggestion in any of the positions that anything new or different will be presented by these petitioners if the case should be reopened than is already in the record, and as above noted, considered by the commission."

## GOLD MARK RECKONING EXTENDS

### German Export Duties and Some Taxes Assessed on Gold Mark Basis—Prices Advance

BERLIN, GERMANY, July 17.—After six months of Franco-Belgian occupation, the Ruhr question seems no nearer settlement than in January.

#### Export Duties on Gold Basis

The Federal Ministry for Economic Affairs has, in conjunction with the Minister of Finance, issued a new order for the payment of export duties (Ausfuhrabgabe) in gold marks, in effect on July 18. Pfennig amounts are taxed to a minimum of 10 pf., less than this amount going tax free. This innovation is only safeguarding receipts from depreciation and entails no hardship, as nearly all export contracts are made in foreign currency. The Prussian Diet has also given power to the Government to increase taxes in proportion to the depreciation of the mark, with the stipulation that the gold customs surcharge is to serve as a maximum index.

Strikes in the Berlin metal and engineering industries and in the building trades have been settled, and employers and employees have agreed to have wages based on the improved cost of living index. The question of finding a way to shift to the gold mark basis is also being discussed. According to the latest official statistics, wages of skilled workmen advanced from 35.10 m. per week in 1913-14 to 100,299 m. in May, 1923, and those of laborers from 24.03 m. to 89,989 m. A comparison of the value of these wages with the cost of living shows that their relative purchasing power during May increased to 74.9 per cent and 98.1 per cent respectively.

Employment in the metal and engineering industry shows little alteration. Generally the works are fairly well employed. There have lately been more domestic inquiries and the volume of orders booked

has increased. Foreign interest does not seem strong, and only an average number of export orders are being booked.

General advances in prices still continue, which is indicated also by the rise in the wholesale index from 33,838 to 48,644 times the pre-war standard, between July 3 and July 10. During the same period food-stuffs advanced 47 per cent; industrial products, 39 per cent; domestic goods, 49 per cent, and imported goods, 27 per cent.

The Prussian Diet has asked the Government to take action against the advances in prices fixed by some of the syndicates, especially those in the iron and steel industry, and generally to increase its influence in these bodies. The resolution stated that the syndicates had done valuable work in fixing export prices and that the Federal Association of the German Industry had exerted its influence to induce the syndicates to fix domestic prices as low as possible, in the general interest, but it had not in all cases met with response, and the policy of the syndicates in regard to domestic prices required strong supervision. It was also pointed out that the Eisenwirtschafts-Bund, in which representatives of the employees, the consumers and the producers are fixing the prices of iron and steel, has no influence on the prices of ore.

Coal has again gone up 50 to 58 per cent, and iron and steel have been advanced 17 to 45 per cent. The following table compares the prices in marks on July 6 and July 17. [See page 349 for prices on Aug. 6, received by Radiogram.]

|                                 | Present Prices | July 6     |
|---------------------------------|----------------|------------|
| Ingots .....                    | 6,019,000      | 4,437,000  |
| Blooms .....                    | 6,780,000      | 5,012,000  |
| Billets .....                   | 7,365,000      | 5,341,000  |
| Sheet bars .....                | 7,580,000      | 5,524,000  |
| Structural shapes .....         | 8,555,000      | 6,262,000  |
| Bar iron .....                  | 8,600,000      | 6,800,000  |
| Hoop iron .....                 | 10,612,000     | 7,733,000  |
| Wire rods .....                 | 9,154,000      | 6,698,000  |
| Sheets: No. 6 and heavier ..... | 9,732,000      | 7,098,000  |
| Nos. 6 to 11 .....              | 10,869,000     | 7,952,000  |
| Nos. 11 to 20 .....             | 12,777,000     | 9,301,000  |
| Nos. 20 and lighter .....       | 14,093,000     | 10,234,000 |

## JULY PIG IRON OUTPUT

Larger Than June, but Lower Daily Rate  
—Decline from June, 3892 Tons  
Per Day

Twenty-seven Furnaces Blown Out and Two  
Blown In—Net Loss of 25

Actual returns from all blast furnaces operating in July show only a small difference from the estimated data published in THE IRON AGE Aug. 2. Telegraphic returns, with the last day's output estimated, indicated a production of 3,679,810 gross tons; the actual returns from the same companies show the July output to have been 1476 tons less than this or 3,678,334 tons. Compared with June, also revised, the total was larger but there was a decided falling off in daily rate.

Production of coke and anthracite pig iron for the 31 days of July amounted to 3,678,334 tons or 118,656 tons per day, as compared with 3,676,445 tons or 122,548 tons per day in June, a 30-day month. The May total, a 31-day month, was 3,867,694 tons or 124,764 tons per day. While the July production exceeded the June by 1889 tons, there was a decline of 3892 tons per day in the output. As compared with April, there was a difference of only 332 tons per day. There were 27 furnaces blown out or banked in July and only 2 blown in, a net loss of 25. This compares with a net gain of 2 in June, 11 in May, and 14 in April.

The total number of furnaces in blast on Aug. 7 was 298 as compared with 323 on July 1 and 321 on June 1. The capacity of the 298 furnaces operating on Aug. 1 is estimated at about 114,200 tons per day as compared with 122,555 tons per day for the 323 furnaces in blast July 1.

The largest output of ferromanganese for any month this year was made in July at 26,493 gross tons.

### Daily Rate of Production

The daily rate of production of coke and anthracite pig iron by months, from July, 1922, is as follows:

| Daily Rate of Pig Iron Production by Months—Gross Tons |             |          |         |
|--|-------------|----------|---------|
|  | Steel Works | Merchant | Total   |
| July, 1922.....  | 62,295      | 15,297   | 77,592  |
| August.....  | 45,672      | 12,914   | 58,586  |
| September.....   | 53,856      | 13,935   | 67,791  |
| October.....   | 66,060      | 19,032   | 85,092  |
| November.....  | 72,177      | 22,813   | 94,990  |
| December.....  | 75,179      | 24,398   | 99,577  |
| January, 1923.....                                     | 79,991      | 24,190   | 104,181 |
| February.....  | 80,684      | 26,251   | 106,935 |
| March.....   | 87,881      | 25,792   | 113,673 |
| April.....   | 90,145      | 28,179   | 118,324 |
| May.....   | 96,029      | 28,735   | 124,764 |
| June.....  | 90,907      | 31,641   | 122,548 |
| July.....  | 88,798      | 29,858   | 118,656 |

The figures for daily average production, beginning with January, 1917, are as follows:

| Daily Average Production of Coke and Anthracite Pig Iron in the United States by Months Since Jan. 1, 1917—Gross Tons |         |         |         |         |        |        |         |
|---|---------|---------|---------|---------|--------|--------|---------|
|   | 1917    | 1918    | 1919    | 1920    | 1921   | 1922   | 1923    |
| Jan.  | 101,643 | 77,799  | 106,525 | 97,264  | 77,945 | 53,063 | 104,181 |
| Feb.  | 94,473  | 82,835  | 105,006 | 102,720 | 69,187 | 58,214 | 106,935 |
| Mar.  | 104,882 | 103,648 | 99,685  | 108,900 | 51,468 | 65,675 | 113,673 |
| Apr.  | 111,165 | 109,607 | 82,607  | 91,327  | 39,768 | 69,070 | 118,324 |
| May   | 110,238 | 111,175 | 68,002  | 96,312  | 39,394 | 74,409 | 124,764 |
| June  | 109,002 | 110,793 | 70,495  | 101,451 | 35,494 | 78,701 | 122,580 |
| July  | 107,820 | 110,354 | 78,340  | 98,931  | 27,889 | 77,592 | 118,656 |
| Aug.  | 104,772 | 109,341 | 88,496  | 101,529 | 30,780 | 58,586 | .....   |
| Sept.   | 104,465 | 113,942 | 82,932  | 104,310 | 32,850 | 67,791 | .....   |
| Oct.  | 106,550 | 112,482 | 60,115  | 106,212 | 40,215 | 85,092 | .....   |
| Nov.  | 106,859 | 111,802 | 79,745  | 97,830  | 47,183 | 94,990 | .....   |
| Dec.  | 92,997  | 110,762 | 84,944  | 87,222  | 53,196 | 99,577 | .....   |
| Year  | 104,619 | 105,496 | 83,789  | 99,492  | 45,325 | 73,645 | .....   |

### Production of Steel Companies—Gross Tons

Returns from all furnaces of the United States Steel Corporation and the various independent steel companies, as well as from merchant furnaces producing ferromanganese and spiegeleisen, show the fore-

going totals of steel making iron, month by month, together with ferromanganese and spiegeleisen. These last, while stated separately, are also included in the columns of "total production."

| Production of Steel Companies—Gross Tons |                  |            |                                 |         |         |         |
|--|------------------|------------|---------------------------------|---------|---------|---------|
|  | Total Production |            | Spiegeleisen and Ferromanganese |         | 1923    |         |
|  | 1922             | 1923       | Fe-Mn                           | Spiegel | Fe-Mn   | Spiegel |
| Jan. ....                                | 1,306,045        | 2,479,727  | 6,874                           | 1,230   | 19,358  | 12,056  |
| Feb. ....                                | 1,311,170        | 2,259,154  | 3,610                           | 4,930   | 21,383  | 3,657   |
| Mar. ....                                | 1,629,982        | 2,724,305  | 11,600                          | 2,095   | 20,730  | 13,832  |
| Apr. ....                                | 1,707,902        | 2,704,360  | 14,998                          | 4,211   | 20,808  | 7,440   |
| May ....                                 | 1,879,180        | 2,976,892  | 15,432                          | 4,902   | 19,568  | 9,533   |
| June ....                                | 1,876,033        | 2,727,208  | 18,273                          | 4,817   | 19,717  | 18,289  |
| 6 mos. ....                              | 9,710,312        | 15,871,646 | 70,787                          | 22,185  | 121,564 | 64,807  |
| July ....                                | 1,931,138        | 2,752,738  | 18,873                          | 7,176   | 26,493  | 12,876  |
| Aug. ....                                | 1,415,832        | .....      | 11,402                          | 7,925   | .....   | .....   |
| Sept. ....                               | 1,615,696        | .....      | 10,681                          | 4,235   | .....   | .....   |
| Oct. ....                                | 2,047,873        | .....      | 9,193                           | 12,283  | .....   | .....   |
| Nov. ....                                | 2,165,295        | .....      | 13,232                          | 4,192   | .....   | .....   |
| Dec. ....                                | 2,330,545        | .....      | 17,007                          | 10,591  | .....   | .....   |
| Year.....                                | 21,216,691       | .....      | 151,175                         | 68,587  | .....   | .....   |

### Output by Districts

The accompanying table gives the production of all coke and anthracite furnaces for July and the three months preceding:

| Pig Iron Production by Districts, Gross Tons       |                   |                   |                  |                    |
|--|-------------------|-------------------|------------------|--------------------|
|  | July<br>(31 days) | June<br>(30 days) | May<br>(31 days) | April<br>(30 days) |
| New York.....                                      | 265,406           | 253,625           | 266,658          | 235,553            |
| New Jersey.....                                    | 18,920            | 26,033            | 24,605           | 18,758             |
| Lehigh Valley.....                                 | 90,231            | 91,078            | 93,493           | 87,366             |
| Schuylkill Valley...                               | 116,428           | 117,779           | 123,061          | 108,744            |
| Lower Susquehanna<br>and Lebanon Val-<br>leys..... | 74,645            | 64,374            | 64,609           | 46,682             |
| Pittsburgh district..                              | 759,159           | 737,839           | 789,330          | 769,672            |
| Shenango Valley...                                 | 142,419           | 164,969           | 169,708          | 146,032            |
| Western Pa.....                                    | 205,059           | 201,026           | 221,369          | 199,177            |
| Maryland, Virginia<br>and Kentucky....             | 91,443            | 89,164            | 107,613          | 103,245            |
| Wheeling district...                               | 155,324           | 149,067           | 157,071          | 146,303            |
| Mahoning Valley...                                 | 366,681           | 378,170           | 383,068          | 362,843            |
| Central and North-<br>ern Ohio.....                | 286,021           | 289,498           | 309,261          | 298,797            |
| Southern Ohio.....                                 | 72,120            | 74,798            | 77,402           | 60,344             |
| Illinois and Indiana                               | 643,043           | 620,281           | 646,913          | 556,223            |
| Mich., Minn., Mo.,<br>Wis. and Colo....            | 139,330           | 159,254           | 160,456          | 144,723            |
| Alabama.....                                       | 236,049           | 239,589           | 249,810          | 241,674            |
| Tennessee.....                                     | 16,056            | 19,901            | 23,267           | 23,600             |
| Total.....   | 3,678,334         | 3,676,445         | 3,867,694        | 3,549,736          |

### Capacities in Blast Aug. 1

The following table shows the number of furnaces in blast Aug. 1 in the different districts and their capacity, also the number and daily capacity in gross tons of furnaces in blast July 1:

| Coke and Anthracite Furnaces in Blast |                 |                       |                               |                       |                               |
|---------------------------------------|-----------------|-----------------------|-------------------------------|-----------------------|-------------------------------|
| Location of<br>Furnaces               | Total<br>Stacks | Aug. 1<br>In<br>Blast | Aug. 1<br>Capacity<br>per day | July 1<br>In<br>Blast | July 1<br>Capacity<br>per day |
| New York:                             |                 |                       |                               |                       |                               |
| Buffalo.....                          | 22              | 20                    | 7,670                         | 20                    | 7,740                         |
| Other New York...                     | 5               | 4                     | 870                           | 4                     | 960                           |
| New Jersey.....                       | 4               | 2                     | 610                           | 3                     | 860                           |
| Pennsylvania:                         |                 |                       |                               |                       |                               |
| Lehigh Valley ....                    | 16              | 8                     | 2,340                         | 9                     | 2,950                         |
| Spiegel.....                          | 2               | 2                     | 210                           | 2                     | 245                           |
| Schuylkill Valley...                  | 15              | 12                    | 3,760                         | 12                    | 3,980                         |
| Lower Susquehanna.                    | 9               | 6                     | 1,870                         | 6                     | 1,700                         |
| Ferromanganese ..                     | 1               | 1                     | 65                            | 1                     | 70                            |
| Lebanon Valley ...                    | 6               | 2                     | 345                           | 2                     | 300                           |
| Ferromanganese ..                     | 2               | 2                     | 120                           | 2                     | 125                           |
| Pittsburgh district..                 | 55              | 52                    | 23,700                        | 54                    | 23,910                        |
| Ferro and spiegel..                   | 4               | 2                     | 235                           | 4                     | 675                           |
| Shenango Valley ...                   | 19              | 10                    | 3,860                         | 14                    | 5,300                         |
| Western Pennsylvania                  | 25              | 18                    | 6,495                         | 19                    | 6,700                         |
| Ferromanganese ..                     | 1               | 1                     | 120                           | .....                 | .....                         |
| Maryland.....                         | 5               | 4                     | 1,400                         | 4                     | 1,430                         |
| Ferromanganese ..                     | 1               | 1                     | 110                           | 1                     | 110                           |
| Wheeling district ...                 | 15              | 12                    | 5,010                         | 12                    | 4,970                         |
| Ohio:                                 |                 |                       |                               |                       |                               |
| Mahoning Valley ...                   | 28              | 25                    | 11,650                        | 27                    | 12,375                        |
| Central and North-<br>ern.....        | 26              | 20                    | 8,925                         | 21                    | 9,650                         |
| Southern.....                         | 16              | 7                     | 1,760                         | 10                    | 2,495                         |
| Illinois and Indiana                  | 42              | 38                    | 20,090                        | 40                    | 20,675                        |
| Mich., Wis. and Minn..                | 12              | 10                    | 3,410                         | 11                    | 4,110                         |
| Colorado and Missouri.                | 6               | 1                     | 350                           | 3                     | 1,195                         |
| The South:                            |                 |                       |                               |                       |                               |
| Virginia.....                         | 18              | 6                     | 830                           | 6                     | 835                           |
| Kentucky.....                         | 7               | 2                     | 505                           | 2                     | 535                           |
| Alabama.....                          | 39              | 25                    | 7,310                         | 28                    | 8,000                         |
| Ferromanganese ..                     | 1               | 1                     | 80                            | 1                     | 85                            |
| Tenn., Ga. and Texas..                | 16              | 4                     | 500                           | 5                     | 575                           |
| Total.....                            | 419             | 298                   | 114,200                       | 323                   | 122,555                       |

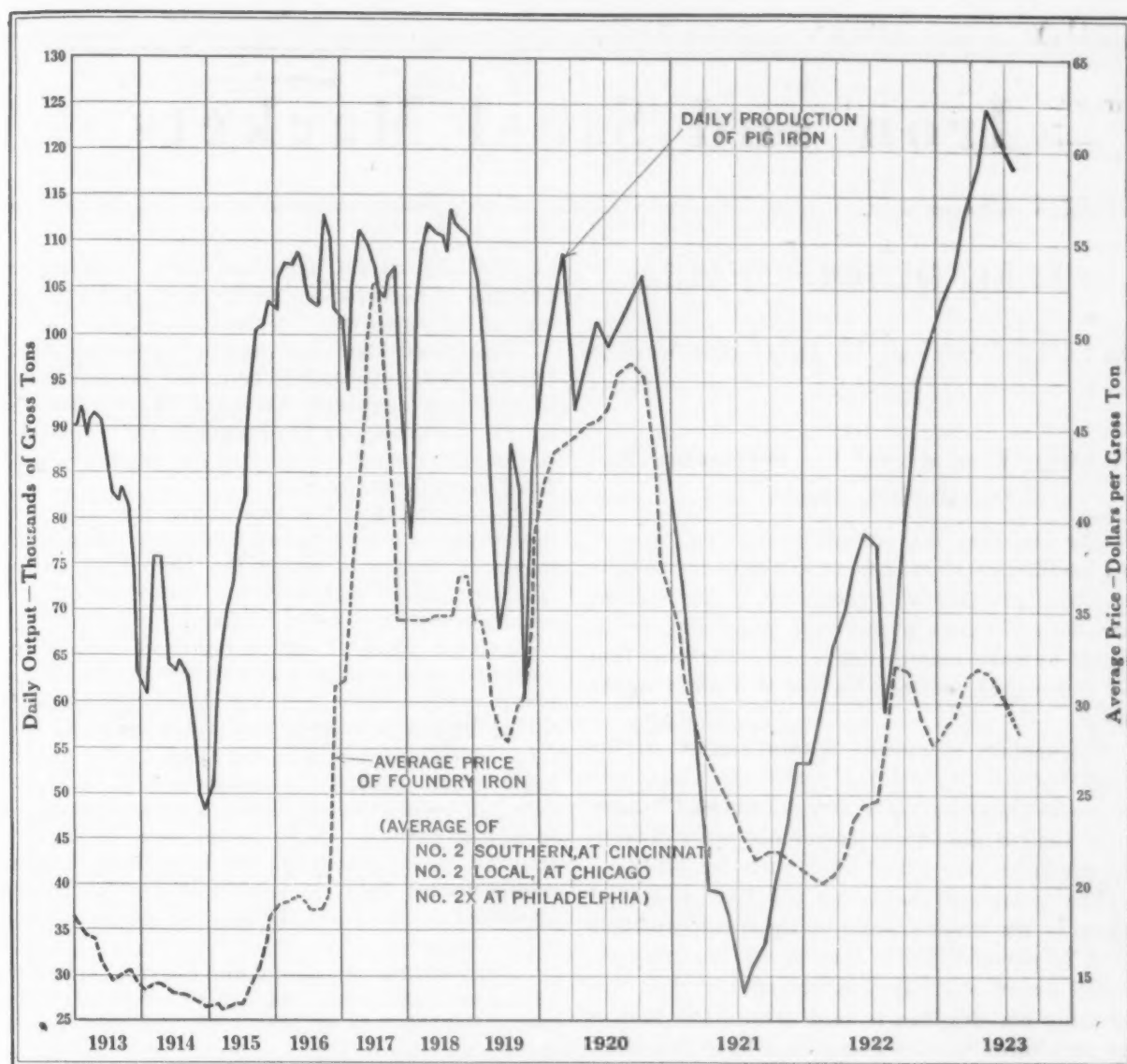


Diagram of Pig Iron Production and Price

The fluctuations in pig iron production from 1913 to the present time are shown in the accompanying chart. The figures represented by the heavy lines are those of the daily average production, by months, of coke and anthracite iron. The dotted curve on the chart represents monthly average prices of Southern No. 2 foundry pig iron at Cincinnati, local No. 2 foundry iron at furnaces in Chicago, and No. 2X at Philadelphia. They are based on the weekly quotations of THE IRON AGE.

*Production of Coke and Anthracite Pig Iron in the United States by Months, Beginning Jan. 1, 1919—Gross Tons*

|           | 1919       | 1920       | 1921       | 1922       | 1923       |
|-----------|------------|------------|------------|------------|------------|
| Jan. ...  | 3,302,260  | 3,015,181  | 2,416,292  | 1,644,951  | 3,229,604  |
| Feb. ...  | 2,940,168  | 2,978,879  | 1,937,257  | 1,629,991  | 2,994,187  |
| Mar. ...  | 3,090,243  | 3,375,907  | 1,595,522  | 2,035,920  | 3,523,868  |
| Apr. ...  | 2,478,218  | 2,739,797  | 1,193,041  | 2,072,114  | 3,549,736  |
| May ...   | 2,108,056  | 2,985,682  | 1,221,221  | 2,306,679  | 3,867,694  |
| June ...  | 2,114,863  | 3,043,540  | 1,064,833  | 2,361,028  | 3,676,445  |
| ½ year... | 16,033,808 | 18,138,986 | 9,428,166  | 12,050,683 | 20,841,534 |
| July ...  | 2,428,541  | 3,067,043  | 864,555    | 2,405,365  | 3,678,334  |
| Aug. ...  | 2,743,388  | 3,147,402  | 954,193    | 1,816,170  | .....      |
| Sept. ... | 2,487,965  | 3,129,323  | 985,529    | 2,033,720  | .....      |
| Oct. ...  | 1,863,558  | 3,292,597  | 1,246,676  | 2,637,844  | .....      |
| Nov. ...  | 2,392,350  | 2,934,908  | 1,415,481  | 2,849,703  | .....      |
| Dec. ...  | 2,633,268  | 2,703,855  | 1,469,086  | 3,086,898  | .....      |
| Year*     | 30,582,878 | 36,414,114 | 16,543,686 | 26,880,383 | .....      |

\*These totals do not include charcoal pig iron. The 1922 production of this iron was 224,781 tons.

Among the furnaces blown in during July was the Oriskany furnace of the Lavino Furnace Co. at Reusens, Va., and the Standard furnace in Tennessee, which had been banked late in June.

Among the furnaces blown out or banked in July were the following: One Wharton furnace of the Replogle Steel Co. in New Jersey; C furnace of the Bethlehem Steel Co. in the Lehigh Valley; one Lucy, one Isabella and the Edith furnace of the Carnegie Steel Co. and No. 1 Alliquippa furnace of the Jones & Laughlin Steel Corporation in the Pittsburgh district; No. 4 New Castle furnace and the Sharon furnace of the Carnegie Steel Co., one Shenango furnace of the Shenango Furnace Co. and the Fannie furnace in the Shenango Valley; one furnace, Max Meadows of the Virginia Iron, Coal & Coke Co. in Virginia; one Youngstown furnace of the Youngstown Sheet & Tube Co. and the Niles furnace of the Carnegie Steel Co. in the Mahoning Valley; one River furnace in northern Ohio; the Milton furnace and one furnace of the Marting Iron & Steel Co. in the Hanging Rock district, as well as the Hamilton furnace in southern Ohio; one Joliet and one South Chicago furnace of the Illinois Steel Co. in Illinois; one Mayville furnace in Wisconsin; two furnaces of the Colorado Fuel & Iron Co. in Colorado; the Philadelphia furnace of the Sloss-Sheffield Steel & Iron Co. and the second Oxmoor furnace and No. 2 Bessemer furnace of the Tennessee Coal, Iron & Railroad Co. in Alabama as well as the Rockdale and the second Allen's Creek furnace in Tennessee.

The Henry furnace at the River Rouge plant of the Ford Motor Co. set a new tonnage figure in July. The average daily output was 551 tons on a coke consumption of 1866 lb. per ton. The average silicon was 3.11 per cent. This furnace is now on the fourth year, having produced approximately 568,040 tons of foundry iron with silicon between 3 and 4 per cent.



# Iron and Steel Markets

## STEEL OUTPUT FALLS

**Down 10 Per Cent in July, But Orders Increase**

**Growing Promptness in Deliveries—Rail Buying Ahead**

The fact that July brought more new business to a number of steel companies than they took in June has been favorably interpreted. At the same time the mills have been giving proof of growing ability to make prompt deliveries, indicating that the renewal of forward buying is some distance ahead.

Black sheet shipments within a week of the order, bars in two to three weeks, and plates and shapes in thirty days are now possible with some mills, though the larger companies with diversified products have not reached such flexibility.

The process of adjusting pig iron and steel output to the present scale of shipment, which is 15 to 20 per cent below that of the recent peak, is still under way. It does not appear that consumption has declined to that extent, but that in the past three months consumers have run their stocks down, whereas in the spring months they were accumulating under fear of scarcity.

Steel ingot production figures for July are expected to show about 10 per cent falling off from June; in other words, the July rate was 40,000,000 to 40,500,000 tons a year, against 49,500,000 tons at the high point in April.

Pig iron curtailment has continued in August, stocks in all districts showing large increases last month.

As men are taken from 12-hr. shifts in the reduction of working hours that has begun already in some districts, output will be brought closely in line with demand. The stabilizing effect the movement will have on prices is already receiving attention from buyers.

Generally speaking, the price situation in finished steel has not changed. However, weakness has developed in hot rolled flats and in cold rolled strips. In the former, independent makers have reduced the base price from 3.30c. to 3.15c. Cold rolled strips from all mills can now be had at 5c., as against the recent independent price of 5.25c.

A decided change in the wire trade is seen in the active solicitation of business by mills that lately were disposed to let the situation drift.

The railroads, which have figured so largely in the year's steel demand, are expected to place orders for 1924 rails in the next sixty days. In-

quiries for 60,000 tons are now pending at Chicago. The Southern Pacific has placed 10,000 tons of tie plates with the Tennessee mill.

Fabricated steel had another 9000-ton week, two-thirds of this amount being for private buildings. Fresh inquiries exceeded 21,000 tons, of which 10,000 tons is for Standard Oil Co. tanks. Railroads have not contributed in some time to the fabricators' order books.

In the market for steel bars the new and higher extras are operating to prevent the cancellation of orders to which the old extras apply. But at Chicago bar iron has weakened, prices now ranging from 2.40c. to 2.50c.

Another week of active pig iron buying, especially in the East and at Chicago and St. Louis, points to the nearer approach of the turning point in the market, but prices are still weak in all centers. A notable purchase was about 35,000 tons of basic by an eastern Pennsylvania steel maker at \$25, delivered. Central Western basic declined \$1 to \$24 at furnace. Fully 20,000 tons of foundry iron has been bought in the New York district within a week and a St. Louis producer has booked 18,000 tons. Southern pipe iron has been bought on a \$23 basis.

The July movement of Lake Superior iron ore, 10,411,248 gross tons, broke all records apart from the 10,659,206 tons of July, 1918, and this is only the fourth time in Lake ore history that shipments have exceeded 10,000,000 tons in a month. The total to Aug. 1 was 26,596,731 tons, nearly 54 per cent gain over the same period in 1922.

With the continued decline of pig iron THE IRON AGE composite price has registered a drop every week, with one exception, since May 8. The present figure, \$24.79, against \$25.38 last week, is just \$6 below that of three months ago and is the lowest in a full year.

Finished steel is stationary at 2.775c. per lb., only one slight change having been made in THE IRON AGE composite price since May 8. It is now 25 per cent above the figure one year ago.

## Pittsburgh

**Prompt Deliveries Easy on Steel Orders—Striking Dip in Pig Iron**

PITTSBURGH, Aug. 7.—It is becoming apparent that despite reports of an improved inquiry for steel, there is not enough business to go round, and while this has not yet been reflected in prices, it is quite apparent in the promptness of deliveries. Prices carry spot delivery on practically all finished products. Black sheets are known to have been shipped in as quickly as a week; lapwelded pipe shipments now are being promised in 30 days, as against 90 days, the average promise of two months or so ago. No difficulty is experienced by buyers in securing bars in two to three weeks, and plates and shapes in a month's time, and there has been a very decided change in the wire products

## A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics

At date, one week, one month, and one year previous

For Early Delivery

| Pig Iron, Per Gross Ton:    | Aug. 7, 1923 | July 31, 1923 | July 10, 1923 | Aug. 8, 1922 |
|-----------------------------|--------------|---------------|---------------|--------------|
| No. 2X, Philadelphia...     | \$25.76      | \$26.26       | \$28.26       | \$31.14      |
| No. 2, Valley furnace...    | 24.00        | 25.00         | 26.00         | 29.00        |
| No. 2, Southern, Cin'tl...  | 28.05        | 28.05         | 29.05         | 24.05        |
| No. 2, Birmingham, Ala...   | 24.00        | 24.00         | 25.00         | 19.50        |
| No. 2 foundry, Chicago...   | 27.00        | 27.00         | 28.00         | 27.00        |
| Basic, del'd, eastern Pa... | 25.00        | 25.50         | 27.00         | 27.25        |
| Basic, Valley furnace...    | 24.50        | 25.00         | 25.00         | 26.00        |
| Valley Bessemer, del. P'gh  | 28.26        | 28.26         | 28.27         | 28.76        |
| Malleable, Chicago*         | 27.00        | 27.00         | 28.00         | 27.00        |
| Malleable, Valley           | 24.50        | 24.50         | 26.00         | 28.00        |
| Gray forge, Pittsburgh...   | 25.76        | 26.26         | 27.27         | 28.76        |
| L. S. charcoal, Chicago...  | 32.15        | 32.15         | 36.65         | 33.15        |
| Ferromanganese, furnace...  | 117.15       | 117.15        | 120.00        | 67.50        |

| Rails, Billets, Etc., Per Gross Ton: | Aug. 7, 1923 | July 31, 1923 | July 10, 1923 | Aug. 8, 1922 |
|--------------------------------------|--------------|---------------|---------------|--------------|
| O.-h. rails, heavy, at mill...       | \$43.00      | \$43.00       | \$43.00       | \$40.00      |
| Bess. billets, Pittsburgh...         | 42.50        | 42.50         | 42.50         | 35.00        |
| O.-h. billets, Pittsburgh...         | 42.50        | 42.50         | 42.50         | 35.00        |
| O.-h. sheet bars, P'gh...            | 42.50        | 42.50         | 42.50         | 35.00        |
| Forging billets, base, P'gh          | 47.50        | 47.50         | 47.50         | 40.00        |
| O.-h. billets, Phila...              | 47.67        | 47.67         | 47.67         | 42.67        |
| Wire rods, Pittsburgh...             | 51.00        | 51.00         | 51.00         | 40.00        |
| Skelp, gr. steel, P'gh, lb...        | 2.40         | 2.40          | 2.40          | 1.80         |
| Light rails at mill...               | 2.25         | 2.25          | 2.25          | 1.75         |

### Finished Iron and Steel,

| Per Lb. to Large Buyers:   | Cents | Cents | Cents | Cents |
|----------------------------|-------|-------|-------|-------|
| Iron bars, Philadelphia... | 2.67  | 2.67  | 2.67  | 2.025 |
| Iron bars, Chicago...      | 2.40  | 2.50  | 2.50  | 2.00  |
| Steel bars, Pittsburgh...  | 2.40  | 2.40  | 2.40  | 1.80  |
| Steel bars, Chicago...     | 2.60  | 2.60  | 2.60  | 1.90  |
| Steel bars, New York...    | 2.74  | 2.74  | 2.74  | 2.14  |
| Tank plates, Pittsburgh... | 2.50  | 2.50  | 2.50  | 1.80  |
| Tank plates, Chicago...    | 2.80  | 2.80  | 2.80  | 1.90  |
| Tank plates, New York...   | 2.84  | 2.84  | 2.84  | 2.14  |
| Beams, Pittsburgh...       | 2.50  | 2.50  | 2.50  | 1.80  |
| Beams, Chicago...          | 2.70  | 2.70  | 2.70  | 1.90  |
| Beams, New York...         | 2.84  | 2.84  | 2.84  | 2.14  |
| Steel hoops, Pittsburgh... | 3.15  | 3.15  | 3.15  | 2.50  |

\*The average switching charge for delivery to foundries in the Chicago district is 61c. per ton.

†Silicon, 1.75 to 2.25. ‡Silicon, 2.25 to 2.75.

The prices in the above table are for domestic delivery and do not necessarily apply to export business.

| Sheets, Nails and Wire,      | Aug. 7, 1923 | July 31, 1923 | July 10, 1923 | Aug. 8, 1922 |
|------------------------------|--------------|---------------|---------------|--------------|
| Per Lb. to Large Buyers:     | Cents        | Cents         | Cents         | Cents        |
| Sheets, black, No. 28, P'gh  | 3.75         | 3.75          | 3.85          | 3.15         |
| Sheets, galv., No. 28, P'gh  | 5.00         | 5.00          | 5.00          | 4.15         |
| Sheets, blue an'l'd, 9 & 10  | 3.00         | 3.00          | 3.00          | 2.40         |
| Wire nails, Pittsburgh...    | 3.00         | 3.00          | 3.00          | 2.40         |
| Plain wire, Pittsburgh...    | 2.75         | 2.75          | 2.75          | 2.25         |
| Barbed wire, galv., P'gh...  | 3.80         | 3.80          | 3.80          | 3.05         |
| Tin plate, 100-lb. box, P'gh | \$5.50       | \$5.50        | \$5.50        | \$4.75       |

### Old Material, Per Gross Ton:

|                              |         |         |         |         |
|------------------------------|---------|---------|---------|---------|
| Carwheels, Chicago           | \$19.50 | \$20.00 | \$21.00 | \$19.50 |
| Carwheels, Philadelphia...   | 20.00   | 20.00   | 20.00   | 17.50   |
| Heavy steel scrap, P'gh...   | 17.00   | 17.00   | 18.50   | 17.50   |
| Heavy steel scrap, Phila...  | 15.50   | 16.00   | 17.00   | 15.00   |
| Heavy steel scrap, Ch'go...  | 16.00   | 16.50   | 17.25   | 15.50   |
| No. 1 cast, Pittsburgh...    | 20.00   | 20.00   | 20.50   | 19.00   |
| No. 1 cast, Philadelphia...  | 20.00   | 20.00   | 21.50   | 18.00   |
| No. 1 cast, Ch'go (net ton)  | 18.50   | 18.50   | 20.50   | 18.00   |
| No. 1 RR. wrot., Phila...    | 18.00   | 18.00   | 19.00   | 17.50   |
| No. 1 RR. wrot., Ch'go (net) | 14.00   | 14.00   | 15.00   | 14.25   |

### Coke, Connellsville, Per Net Ton at Oven:

|                         |        |        |        |         |
|-------------------------|--------|--------|--------|---------|
| Furnace coke, prompt... | \$4.50 | \$4.25 | \$4.75 | \$14.00 |
| Foundry coke, prompt... | 5.25   | 5.25   | 5.50   | 15.00   |

### Metals,

| Per Lb. to Large Buyers:      | Cents     | Cents     | Cents     | Cents     |
|-------------------------------|-----------|-----------|-----------|-----------|
| Lake copper, New York...      | 14.75     | 14.87 1/2 | 14.87 1/2 | 14.12 1/2 |
| Electrolytic copper, refinery | 14.12 1/2 | 14.37 1/2 | 14.25     | 13.75     |
| Zinc, St. Louis...            | 6.15      | 6.30      | 6.05      | 6.30      |
| Zinc, New York...             | 6.50      | 6.65      | 6.40      | 6.65      |
| Lead, St. Louis...            | 6.62 1/2  | 6.65      | 5.70      | 5.50      |
| Lead, New York...             | 6.75      | 6.75      | 6.00      | 5.85      |
| Tin (Straits), New York...    | 38.37 1/2 | 38.75     | 38.25     | 32.62 1/2 |
| Antimony (Asiatic), N. Y.     | 7.60      | 7.70      | 6.75      | 5.25      |

### Composite Price Aug. 7, 1923, Finished Steel, 2.775c. Per lb.

|   |   |
|---|---|
| Based on prices of steel bars, beams, tank plates, plain wire, open-hearth rails, black pipe and black sheets | July 31, 1923, 2.775c.<br>July 10, 1923, 2.789c.<br>Aug. 8, 1922, 2.212c.<br>10-year pre-war average, 1.689c. |
| These products constitute 88 per cent of the United States output of finished steel                           |   |

### Composite Price Aug. 7, 1923, Pig Iron, \$24.79 Per Gross Ton

|   |   |
|---|---|
| Based on average of basic and foundry irons, the basic being Valley quotation, the foundry an average of Chicago, Philadelphia and Birmingham | July 31, 1923, \$25.38<br>July 10, 1923, 26.04<br>Aug. 8, 1922, 25.94<br>10-year pre-war average, 15.72 |
|---|---|

situation in that producers, recently so indifferent to new business, now are actively soliciting business.

Definite weakness has appeared in hot rolled flats and in cold rolled strips. In the former, independent makers have generally reduced the base price from 3.30c. to 3.15c. and the change carries the narrow light gage material, for some time held at a premium over the easily rolled sizes, to the same level. Independent makers of cold rolled strips have receded from the 5.25c. base to 5c., thus matching the Steel Corporation base. In both cases, the revision includes tonnage on the books of makers entered at higher prices.

In a broad way, the question of prices is paramount with buyers today, as it was bound to be as they neared the end of their orders with the mills and began to sound the market on future supplies. Efforts now are being made to introduce the probable increase in costs as a result of the elimination of the 12-hr. day in the steel industry as a reason why at least present prices must be maintained. It is estimated that this change will add at least \$2 per ton and possibly more to the cost of making steel and it is argued this increase cannot be assumed by the steel manufacturers.

The stabilizing effort in pig iron prices here has not

been successful as yet. Important producers are not deviating from quotations, but by adhering to what they regard as fair prices, they appear to be merely "holding the umbrella" for those who have iron they want to move. Still lower prices have been reached within the week under review on basic and foundry grades. There is better balance between supply and demand in the coke market and the price is slightly firmer. No further decline is observed in the better grades of scrap, but light material still is very weak and hard to move.

The Carnegie Steel Co. on Aug. 2 put out its second Lucy stack in Pittsburgh and now is making iron in 46 furnaces out of a total of 59. This is a net loss of 7 furnaces from the peak point reached in May and maintained through June. Clinton Iron & Steel Co., Pittsburgh, probably will blow out its furnace next week, and it is reported that the McKinney Steel Co., Cleveland, will soon put out one of its Josephine, Pa., furnaces. Bessemer steel ingot production is low in this and nearby districts, but open hearth furnace activities show no material decline.

**Pig Iron.**—Sales of basic iron last week at \$24, Valley furnace, are reported to have absorbed all the



iron available at that figure. Lately the offers at that grade have been at \$24.50, and there was one sale of 2000 tons to a producer having a large contract to fill at \$25. This iron cannot run above 1 per cent in silicon, nor below 1 per cent in manganese, and there are a few producers who will not take the business except at the full quotations. Most makers are holding to \$25, Valley furnace, for basic, but outside of an inquiry for 2000 tons from the Edgewater Steel Co., Edgewater, Pa., there is no business in sight, as other users supplied their present requirements from the low priced offerings of last week. The regular market price of \$26.50, Valley furnace, on Bessemer iron is well observed, although 600 tons for last quarter shipment was secured by a local melter at \$26. There was another sale of this grade of 500 tons and other lots aggregating about 200 tons, all at the full price. The business done establishes the quotable market at \$26 to \$26.50. As low as \$24.50 for No. 2 foundry at Valley furnace has been made to consumers in the past week, and brokers have been able to buy as low as \$24; on the other hand, there have been sales up to \$26 for the base grade, but usually in small lots and then of a brand which the melters must have for their mixes. Warren Tool & Forge Co., Warren, Ohio, is in the market for 1000 tons of malleable iron; quotations of \$25.50 and \$26 have not proved interesting, since iron of this grade still is to be had as low as \$24.50. W. P. Snyder & Co. make the average price of basic iron shipped from Valley furnaces in July \$24.75 and of Bessemer \$26.70.

We quote Valley furnace, the freight rate for delivery to the Cleveland or Pittsburgh district being \$1.76 per gross ton:

|   |                    |
|---|--------------------|
| Basic .....                                 | \$24.00 to \$25.00 |
| Bessemer .....                              | 26.50              |
| Gray forge .....                            | 24.00 to 25.50     |
| No. 2 foundry .....                         | 24.50 to 26.00     |
| No. 3 foundry .....                         | 24.00 to 25.50     |
| Malleable .....                             | 24.50 to 25.50     |
| Low phosphorus, copper free (nominal) ..... | 33.00              |

**Ferroalloys.**—Interest in supplies on the part of consumers still is lacking, because they are amply covered by contracts and there are no delays to shipments. Prices show no change, but they are merely nominal. Some resale ferromanganese, which recently was offered at \$115, Atlantic seaboard, without finding takers, now is available at \$111.50, or \$6 a ton below the public quotation of makers, both domestic and British. No. 2 furnace, American Manganese Mfg. Co., Dunbar, Pa., now on foundry iron, will be turned over to the production of spiegeleisen late this week. Prices are given on page 371.

**Semi-Finished Steel.**—The National Tube Co. was a recent buyer of billets, slabs and skelp, taking in all about 25,000 tons, and so far as can be learned was unable to develop lower prices than recently have been quoted. This business was divided between a Youngstown producer and one located to the east of Pittsburgh. Although the local steel-making subsidiary of the Steel Corporation is running at about 92 per cent of ingot capacity, it apparently is not getting out enough semi-finished steel for its own requirements and those of the associated companies, since the American Sheet & Tin Plate Co., although not a buyer, is short of open hearth sheet bars. Outside of this activity, the semi-finished steel market is as quiet as it has been at any time lately. Finishing mills, which do not produce their own steel, are getting ample supplies on requirement contracts and this obviates the necessity of open market purchases. The market is still quoted at \$42.50, Pittsburgh or Youngstown, on billets, sheet bars and slabs, and while reports persist that lower prices can be done, there is nothing in the way of sales to substantiate them. Forging billets are quoted by all makers at \$47.50 base, but sales are few and small. Skelp holds at 2.40c. and wire rods at \$51 base. Orders and specifications for the latter are light. Prices are given on page 371.

**Wire Products.**—New business, despite the fact that inquiry is expanding, still lags behind shipments on old orders with most makers in this district. It is claimed by some that current obligations will take 60 days to complete and the leading interest is said to have about 90 days' business in sight. Jobbers, however, for the

first time in several months are building up their stocks, indicating a heavier movement on old orders than was the case recently, and it is also observed that some mills which were not anxious for business a short time ago, now are in a receptive mood. All mills here are adhering to \$3 base per keg for nails and \$2.75 base per 100 lb. for plain wire. Some shading of these prices is reported in the southern Ohio territory by mills local to that district, but it is reported that the Colorado Fuel & Iron Co., which was on a base of \$2.90 for nails, advanced its price to \$3 as of Aug. 1. The labor situation is slightly easier with local mills and there has been some expansion in production. Prices are given on page 370.

**Steel Rails.**—The local standard rail unit of the Steel Corporation has about all the business it can handle for the remainder of this year and is virtually out of the market for additional tonnages for shipment in the next four months. There is more interest in light rails than there was recently, but sales remain small and competition for orders is rather stiff, although mills rolling these sections from new billets deny going under 2.25c. base for 25- to 45-lb. rails.

We quote light rails rolled from new steel at 2.25c. base (25-lb. to 45-lb.); those rolled from old rails, 2.10c. to 2.25c. base (12-lb. to 45-lb.), f.o.b. mill; standard rails, \$43 per gross ton mill, for Bessemer and open-hearth sections.

**Iron and Steel Bars.**—There is no change in the base price, but it carries with very prompt delivery. Demands are moderate both individually and in the aggregate. Iron bars are holding in price, but are not actively sought.

We quote soft steel bars, rolled from billets, at 2.40c. base; bars for cold-finishing of screw stock analysis, \$3 per ton over base; reinforcing bars, rolled from billets, 2.40c. base; refined iron bars, 3.25c. base, in carload lots or more f.o.b. Pittsburgh.

**Tin Plate.**—Pressure for shipments still is extremely heavy, particularly for perishable food container sizes. Much tonnage is wanted to supplement contract shipments, but actual business is reduced by the fact that there are no mills in a position to take on more business and keep the promise of delivery required. Fourth quarter prices are not expected to be any lower than those now ruling and if steel advances on account of the elimination of the 12-hr. day, an advance may be made. The market now is \$5.50 per base box, Pittsburgh, with all makers at that price.

**Cold-Finished Steel Bars and Shafting.**—Shipments on old orders still are running well in excess of new bookings, but evidently most makers have enough orders in sight to be freed of the necessity of actively soliciting business, since deviations from the regular market price of 3.25c. base, Pittsburgh, are virtually unknown, except in the case of one mill in the Middle West and one in the East, which are taking business at 3.15c. The recently adopted extras for quality, size, cutting, etc., now effective add roughly about \$5 per ton to the cost of hot-rolled bars and are another factor in the maintenance of prices. These changes, however, were anticipated in cold-finished bars, which probably explains the absence of efforts to advance the latter. Ground shafting holds at 3.65c. base, f.o.b. mills for car lots.

**Hot-Rolled Flats.**—These products are slow of sale and not especially active in the matter of specifications, although expansion of activities among automobile parts manufacturers is helping strips to some extent. There has been a general reduction among independents from 3.30c., base, to 3.15c., and it is understood that contracts written at the higher prices have been revised to the lower figure. This change also carries the light narrow material, which for some time has commanded a premium over the easily rolled gages and widths, to 3.15c. Reports persist of sales of wide strips as low as 3c., base. Prices are given on page 370.

**Tubular Goods.**—While some steel pipe makers claim that new orders in July balanced shipments, such a claim is an exception rather than the rule. New demands from the oil industry still are tapering and while a good deal of material is being shipped, it is largely on account of old orders. This assertion is substantiated by the fact that some mills now can make



deliveries of lap-welded pipe as promptly as 30 days, while the most distant delivery that is promised of about four to six weeks is about twice as prompt as the mills were promising a short time ago. In the butt-welded sizes the situation is relatively stronger, since the demand has held out more persistently and the mills have not had cancellations to enable them to catch up with their obligations. Wrought iron pipe mills have reduced their order books to a point where they can make very prompt deliveries on new business. Boiler tubes are moving freer on old than new business. Discounts are given on page 370.

**Sheets.**—A substantial expansion in the specifications for automobile sheets is the outstanding feature of the market this week. Automobile manufacturers have completed the tests of their new 1924 models and have had sufficient response in the way of sales to release orders to the parts makers. There has not been much interruption to shipping instructions in the other finishes and buyers still are taking all the tonnage due them on old orders. New business is light, however, particularly in black sheets, and the report persists that several mills want orders in that grade badly enough to go below the regular market price of 3.85c. base to get them. Some interest in fourth quarter prices is beginning to show. It is probable that the leading interest will not announce prices for that period until after Labor Day. It is stated that the elimination of the 12-hr. day will not mean much if any change in sheet mill costs, since over 90 per cent of the men now are on an 8-hr. basis, but it is estimated that the change in the working time in the steel plants will add at least \$2 a ton to the cost of steel and this will be reflected in sheet prices. There is no certainty that the shorter workday will be fully established by the last quarter of the year, but if it is the incident increase in costs will at least probably mean the maintenance of present prices. Mill operations are expanding, but there is no corresponding increase in production, owing to the high humidity, which has reduced the efficiency of the workmen. Prices are given on page 370.

**Cold-Rolled Strips.**—There has been a general recession on the part of independent makers from 5.25c. base, Pittsburgh, to 5c. The latter price has been that of the American Steel & Wire Co. for several weeks, and lately the independents have been finding it difficult to obtain more. Remaining third quarter tonnages on the books of independent makers will share in this cut of \$5 per ton.

**Structural Material.**—Demands upon local mills are not keeping pace with the deliveries of old orders and the price, though unchanged, is more of a spot than a future delivery quotation than it was recently. Structural shops in the district are finishing their jobs more rapidly than they are getting new ones, and better delivery promises are being offered and some shops need work sufficiently to go pretty low to get awards. Plain material prices are given on page 370.

**Plates.**—Tank inquiries are productive of a lively inquiry for plates, but builders here are not far enough along with old orders to guarantee the delivery demanded and are getting practically none of the business. Local mills have been helped by the inability of Western mills to take business offered. The price is unchanged at 2.50c., base, Pittsburgh, but this price carries quick delivery. Prices are given on page 370.

**Bolts, Nuts and Rivets.**—Business in bolts and nuts is slow, both as regards orders and specifications. There is considerable anxiety for orders on the part of makers, as is indicated by quotations of 50, 10, 10 and 5 per cent off list for large machine bolts. Price cutting in a market like the present one only serves to make buyers more cautious. The rivet market also is rather unsettled by the fact that the leading Cleveland maker is going \$5 per ton below the price of local makers to get orders. Local makers claim they have not met the Cleveland price and they cannot do so without loss with the cost of steel bars higher as a result of the increased extras for size, etc., recently established. It is apparent, however, that on new business \$3.25, base, for heavy structural rivets is both

maximum and extreme. Prices and discounts are given on page 370.

**Track Fastenings.**—Fair demand is noted for small lots of large railroad spikes, but actual orders for small spikes still are light though inquiry is said to be better. Prices are given on page 371.

**Coke and Coal.**—Production of beehive oven furnace coke is more nearly in balance with the demand and, while there are occasional sales of "distress" tonnages as low as \$4.25, the real market so far as an assured supply is concerned no longer is below \$4.50 per net ton at oven. A local steel company, not making its entire requirements in its own ovens, paid the latter price on a week's supply. Some interest is beginning to show in fourth-quarter contracts and one involving 10,000 tons a month is reported to have been closed at \$5 net to the producer. On monthly contracts or for the remainder of the present quarter, most producers now regard \$5 as minimum. Plenty of spot foundry coke is available at \$5.25 to \$5.75, although the demand is heavier than it has been. The coal market is steadier, but not much strengthened by a still low state of production. It is doubtful that production of commercial mines now is 50 per cent of capacity, but there is no shortage. Mine run steam coal still ranges from \$1.65 to \$2, and mine run gas and coking coal from \$2.25 to \$2.35, although the latter price lately has been more of an asking than a selling price. Steam slack commands from \$1.35 to \$1.40 and gas slack about \$1.50.

**Old Material.**—Small purchases of heavy melting steel for delivery at Midland, Pa., seem to have steadied the market on that grade at the prices of a week ago, but the market is as weak as ever on the lighter grades, particularly those for blast furnace use, which are extremely hard to move. The principal users in this district are embargoed and material that has to be sold is hard to place at any price. Steel foundries are in the market for the better grades of railroad steel and for low phosphorus melting stock and their purchases have imparted some strength to those grades. Evidently there are some short sales to be covered, since offerings of the Pennsylvania Railroad, Central Region, brought \$18, delivered, for heavy melting steel, \$22 for knuckles and couplers and \$18.75 for rails.

We quote for delivery to consumers' mill in the Pittsburgh and other districts taking the Pittsburgh freight rate as follows:

| Per Gross Ton  |                    |
|--|--------------------|
| Heavy melting steel.....   | \$17.00 to \$17.50 |
| No. 1 cast, cupola size.....   | 21.00 to 21.50     |
| Rails for rolling, Newark and Cambridge, Ohio; Cumberland, Md.; Huntington, W. Va., and Franklin, Pa. .... | 18.00 to 18.50     |
| Compressed sheet steel.....  | 15.50 to 16.00     |
| Bundles, sheets, sides and ends..  | 14.50 to 15.50     |
| Railroad knuckles and couplers..   | 21.00 to 21.50     |
| Railroad coil and leaf springs...  | 21.00 to 21.50     |
| Low phosphorus bloom and billet ends .....   | 23.00 to 23.50     |
| Low phosphorus plate and other material .....  | 22.00 to 22.50     |
| Railroad malleable .....   | 20.00 to 20.50     |
| Steel car axles .....  | 21.00 to 21.50     |
| Cast iron wheels .....   | 18.00 to 18.50     |
| Rolled steel wheels .....  | 21.00 to 21.50     |
| Machine shop turnings.....   | 10.75 to 11.25     |
| Sheet bar crops .....  | 20.00 to 21.00     |
| Heavy steel axle turnings .....  | 13.50 to 14.00     |
| Short shoveling turnings.....  | 13.00 to 13.50     |
| Heavy breakable cast.....  | 17.00 to 17.50     |
| Stove plate .....  | 14.50 to 15.00     |
| Cast iron borings .....  | 13.00 to 13.50     |
| No. 1 railroad wrought .....   | 14.00 to 14.50     |
| No. 2 railroad wrought .....   | 17.00 to 17.50     |

Increased charges for heat treating axles were generally established in May. A new card of extras was issued superseding one dated Jan. 1, 1921. The extra for annealing is now 1c. per lb. against 0.5c. and the extra for quenching and tempering 1.8c. against 1c. obtaining up to May. The base price of axles is 3c., Pittsburgh.

Work is steadily progressing on the construction of four large basic open-hearth furnaces and a 14-in. continuous merchant mill for the Inland Steel Co. at Indiana Harbor, Ind., with prospects for their completion by December. The remainder of the company's expansion program has not yet been definitely decided upon.

## Chicago

### Turn in Pig Iron Buying—Rail Purchases for 1924 Early Possibility

CHICAGO, Aug. 7.—Pig-iron buying has taken a turn for the better and a fair tonnage for both early shipment and fourth-quarter delivery has been booked by Chicago district furnaces. A St. Louis producer has taken orders for 18,000 tons, of which 14,000 tons was basic and the remainder malleable and foundry.

The finished steel situation shows no material change. Buying is on a somewhat broader scale, the leading mill having had the heaviest orders for any week in three months and the best specifications since March. Jobbers also note a gradual improvement in business, particularly from the metropolitan centers as contrasted with the rural districts. Warehouse business for July showed a gain over June. Current shipments from mills still exceed new commitments, but local producers still have comfortable backlogs, one mill in fact being farther behind on deliveries than at the first of the year. Sellers believe that the inception of a buying movement is at hand and that the stability of present prices is assured, if indeed the abandonment of the 12-hr. day does not necessitate advances. In this connection it is pointed out that the transition to the new basis of operation will involve some confusion, which will tend to limit production for a time.

The railroads, which have been the heaviest consumers of finished steel, are expected to continue in that role. Most of the carriers, according to present indications, will place orders for rails for 1924 delivery between now and Oct. 1. Inquiries for 60,000 tons are now pending. No further oil storage tank awards are reported, but the Standard Oil Co. of New Jersey has entered the market for 29 tanks for erection in the East.

Local mill and blast furnace operations are unchanged.

**Pig-Iron.**—Demand has picked up notably during the past few days and orders ranging from carloads to a thousand tons have been placed. Prices, which have been very weak, are now showing a firmer tendency and it is doubtful whether Northern iron can be bought at better than \$27, base, Chicago furnace. In fact, carload lots are bringing as high as \$27.50, base. It is too early to determine whether current activity in the market is a mere flash in the pan or whether it marks the inception of a buying movement, but in view of heavier buying in other centers, sellers feel that the protracted lull has come to an end. Among inquiries before the trade may be mentioned 750 tons of malleable for fourth-quarter delivery wanted by a Wisconsin melter, 200 tons of foundry, 100 tons of malleable and 50 tons of 10 per cent silvery desired by a local buyer for early shipment and 500 tons of foundry for a Chicago user for prompt delivery. A local steel interest is inquiring for 500 tons of 10 per cent Bessemer ferrosilicon. A local melter has closed for 500 tons of charcoal iron. That transportation difficulties may again retard deliveries of iron, if they do not in fact force curtailment of production, is feared in some quarters. Already a shortage of cars is being felt in certain sections of Ohio as well as in Tennessee and the situation may become general when the heavy fall traffic gets under way.

Quotations on Northern foundry high phosphorus malleable and basic irons are f.o.b. local furnace and do not include an average switching charge of 61c. per ton. Other prices are for iron delivered at consumers' yards or when so indicated, f.o.b. furnace other than local.

|   |                    |
|---|--------------------|
| Lake Superior charcoal, averaging sil. 1.50, delivered at Chicago.. | \$32.04 to \$32.15 |
| Northern coke, No. 1, sil. 2.25 to 2.75 .....                       | 27.50 to 28.00     |
| Northern coke, foundry No. 2, sil. 1.75 to 2.25 .....               | 27.00 to 27.50     |
| Malleable, not over 2.25 sil. ....                                  | 27.00 to 27.50     |
| Basic .....   | 27.00 to 27.50     |
| High phosphorus .....   | 27.00 to 27.50     |
| Southern No. 2 .....  | 30.01 to 31.01     |
| Low phos., sil. 1 to 2 per cent, copper free .....                  | 34.00 to 35.00     |
| Silvery, sil. 8 per cent. ....                                      | 39.29              |

**Ferroalloys.**—A local melter has purchased 100 tons of resale spiegeleisen at a concession under the prices quoted by furnaces. Otherwise the ferroalloys are quiet.

We quote 80 per cent ferromanganese, \$125.06 to \$125.88 for all deliveries; 50 per cent ferrosilicon, \$88 to \$90, delivered; spiegeleisen, 18 to 22 per cent, \$53.58, delivered.

**Structural Material.**—John Griffiths & Son Co., Chicago, is low bidder on the general contract for a sewage disposal plant to be built by the Sanitary District, Chicago, involving 750 tons. Bridges for this project, on which separate bids will be taken, are said to require more than 2000 tons additional. There have been few structural steel lettings during the week, but fabricators are placing stock orders with the mills more freely than for several weeks. Some business on which prompt shipment is desired is going to mills East of Chicago.

The mill quotation on plain material is 2.60c. to 2.70c., Chicago. Jobbers quote 3.30c. for plain material out of warehouse.

**Plates.**—The Sinclair Crude Oil Purchasing Co., which last week placed 60 oil storage tanks, is expected to place additional tank orders. In the aggregate, demand for plates is still light, although orders and specifications received by local mills are the best in several weeks.

The mill quotation is 2.60c. to 2.80c., Chicago. Jobbers quote 3.30c. for plates out of stock.

**Preliminary Sec Chicago Iron and Steel Market**

**Reinforcing Bars.**—The John Griffiths & Son Co., Chicago, submitted the low bid on the general contract for the north side sewage disposal plant to be built by the Sanitary District, Chicago. Lettings of bars of more than 100 tons are few and smaller awards are also less numerous than earlier in the year. Approximately 1000 tons of bars for the Illinois road work is pending, and the State is now taking bids on lots of 500 to 1000 tons twice a month instead of taking figures every six weeks as formerly. The taking of bids on the freight house for the Chicago, Burlington & Quincy, Chicago, involving 900 tons, has been postponed until Aug. 18.

Lettings include:

Public school, Winfield, Iowa, 140 tons to Concrete Steel Co.  
Illinois State bridge work, 100 tons to Kalman Steel Co.  
Pending business includes:  
Chicago, Burlington & Quincy freight house, Chicago, 900 tons, taking of bids postponed until Aug. 18.  
Illinois road work, 1000 tons.  
Clubhouse for Olympia Fields Golf Club near Chicago, 200 tons.

**Bars.**—Buying of soft steel bars shows slight improvement. There has been increased demand during the week from dealers in deformed bars and inquiry from other sources has been somewhat more active. Reports from Detroit indicate that while a few automobile manufacturers continue to operate at capacity, most of them show a slight decline in production, due, it is said, to changes in design. Bar iron has weakened, although demand shows some betterment. Prices now range from 2.40c. to 2.50c., Chicago mill. New business in rail steel bars is light. The new extras on this commodity are the same as those on soft steel bars for rounds, squares, flats and hexagons. New extras on special sections have not yet been announced. The Chicago Heights mill of the Inland Steel Co. will close for two weeks for repairs at the end of the current week.

Mill prices are: Mild steel bars, 2.50c. to 2.60c., Chicago; common bar iron, 2.40c. to 2.50c., Chicago; rail steel, 2.30c., Chicago mill.

Jobbers quote 3.20c. for steel bars out of warehouse. The warehouse quotation on cold-rolled steel bars and shafting is 4.55c. for rounds and 5.05c. for flats, squares and hexagons.

Jobbers quote hard and medium deformed steel bars at 3c. base; hoops, 4.55c.; bands, 3.95c.

**Wire Products.**—The summer lull still persists and new business is limited, but sellers look forward to a revival of demand toward the close of the current month. Indications are that jobbers' stocks are low and that retailers' shelves are bare. Pressure for deliveries against old orders is still felt and jobbers report a continuation of good business, particularly in industrial centers. Demand from agricultural sections, of course, is normally quiet during the summer. Mills



are able to make excellent shipments on barbed wire, but some of them, notably the leading producers, are still as much as six weeks behind on wire nail deliveries. For mill prices, see Finished Iron and Steel, f.o.b. Pittsburgh, page 370.

We quote warehouse prices f.o.b. Chicago: No. 6 to No. 9 bright basic wire, \$2.90 per 100 lb.; extra for black annealed wire, 15c. per 100 lb.; common wire nails, \$3.80 per 100 lb.; cement coated nails, \$3.25 per keg.

**Bolts and Nuts.**—Although demand has shown no particular improvement, price shading is less general than heretofore. The new extras on soft steel bars recently put into effect by the mills will add materially to the cost of bolt and nut manufacture.

Jobbers quote structural rivets, 4c.; boiler rivets, 4.10c.; machine bolts up to  $\frac{3}{4}$  x 4 in., 45 and 5 per cent off; larger sizes, 45 and 5 off; carriage bolts up to  $\frac{3}{4}$  x 6 in., 40 and 5 off; larger sizes, 40 and 5 off; hot pressed nuts, squares and hexagons, tapped, \$2.50 off; blank nuts, \$2.50 off; coach or lag screws, gimlet points, square heads, 50 and 5 per cent off.

**Sheets.**—The market is still quiet and it is a question whether prices would hold if inquiries involving several thousand tons should appear. Deviations from ruling quotations are still of an exceptional character owing to the small amount of business coming up for consideration. Orders for black sheets have been placed at as low as 3.75c. base Pittsburgh, and a few lots of galvanized have been bought at 4.90c. and 4.95c. base Pittsburgh. Local mills being committed through the quarter are not actively soliciting business, although their customers in some instances are pressing them to accept additional tonnage.

Mill quotations are 3.85c. for No. 28 black, 3c. for No. 10 blue annealed and 5c. for No. 28 galvanized, all being Pittsburgh prices, subject to a freight rate to Chicago of 34c. per 100 lb.

Jobbers quote f.o.b. Chicago, 4.35c. for blue annealed, 5.20c. for black and 6.35c. for galvanized.

**Rails and Track Supplies.**—The Norfolk & Western inquiry for 50,000 tons of rails for delivery at the rate of 5000 tons a month, starting in September, is still before the trade. This road is also in the market for 5000 tons of angle bars and an equal tonnage of spikes and bolts. A Western road has put out an inquiry for 10,000 tons of rails for 1924 delivery, and most other lines are expected to enter the market for their next year's rail needs between now and the first of October. The Oregon Short Line will build a branch line from Rogerson, Idaho, to Wells, Nev., a distance of 98 miles, at an estimated cost of \$5,000,000. The Southern Pacific has placed 10,000 tons of tie plates with the Tennessee mill. The only important order for track supplies taken during the week by local mills was 2000 tons of angle bars. Demand for light rails is very small.

Standard Bessemer and open-hearth rails, \$43; light rails, rolled steel, 2.25c. f.o.b. makers' mills.

Standard railroad spikes, 3.25c. mill; track bolts with square nuts, 4.25c. mill; iron tie plates, 2.85c. mill; steel tie plates, 2.60c., f.o.b. mill; angle bars, 2.75c. f.o.b. mill.

Jobbers quote standard spikes out of warehouse at 3.90c. base and track bolts 4.90c. base.

**Cast Iron Pipe.**—Cleveland will take bids on 1000 tons of water pipe Aug. 9. South Bend, Ind., is in the market for 400 tons of 4 to 10 in. Eloise, Mich., will take bids Aug. 15 on 7200 ft. of 4 to 8 in. Independence, Iowa, will receive bids on 80 tons of 4 and 6 in. Defiance, Ohio, has awarded 65 tons to James B. Clow & Sons. The market is quiet and without important features.

We quote per net ton, f.o.b. Chicago, as follows: Water pipe, 4-in., \$64.20; 6-in. to 12-in., \$60.20; above 12-in., \$57.20 to \$59.20; class A and gas pipe, \$5 extra.

**Old Material.**—Although consumers are showing more interest in the market to the extent that they are willing to buy at their own prices, the amount of tonnage changing hands is still comparatively small. A steel works has closed for a few thousand tons of heavy melting, and there has been some slight increase in the number of orders received for other grades of scrap, ranging in size from carloads up to 500 and 1000 tons each. A number of dealers are buying more freely to fill old orders and this is regarded as an indication that they feel that prices are scraping bottom. It is interesting to note, however, that additional declines have been registered on numerous grades of scrap listed be-

low. Railroad offerings include the Chicago & Eastern Illinois, 1200 tons, and the Pere Marquette, 3000 tons.

We quote delivery in consumers' yards, Chicago and vicinity, all freight and transfer charges paid, as follows:

| Per Gross Ton                        |                    |
|--------------------------------------|--------------------|
| Iron rails                           | \$22.00 to \$22.50 |
| Cast iron car wheels                 | 19.50 to 20.00     |
| Relaying rails, 56 and 60 lb.        | 28.50 to 29.50     |
| Relaying rails, 65 lb. and heavier   | 32.00 to 35.00     |
| Roller or forged steel car wheels    | 20.00 to 20.50     |
| Rails for rolling                    | 17.50 to 18.00     |
| Steel rails, less than 3 ft.         | 19.00 to 19.50     |
| Heavy melting steel                  | 16.00 to 16.50     |
| Frogs, switches and guards cut apart | 16.00 to 16.50     |
| Shoveling steel                      | 15.75 to 16.25     |
| Drop forge flashings                 | 10.00 to 10.50     |
| Hydraulic compressed sheets          | 12.50 to 13.00     |
| Axle turnings                        | 13.00 to 13.50     |
| Steel angle bars                     | 17.25 to 17.75     |
| Per Net Ton                          |                    |
| Iron angle and splice bars           | 22.00 to 22.50     |
| Iron arch bars and transoms          | 22.00 to 22.50     |
| Iron car axles                       | 25.50 to 26.00     |
| Steel car axles                      | 17.50 to 18.00     |
| No. 1 busheling                      | 12.50 to 13.00     |
| No. 2 busheling                      | 9.00 to 9.50       |
| Cut forge                            | 14.25 to 14.75     |
| Pipes and flues                      | 9.50 to 10.00      |
| No. 1 railroad wrought               | 14.00 to 14.50     |
| No. 2 railroad wrought               | 14.25 to 14.75     |
| Steel knuckles and couplers          | 18.50 to 19.00     |
| Coil springs                         | 19.00 to 19.50     |
| No. 1 machinery cast                 | 18.50 to 19.00     |
| No. 1 railroad cast                  | 17.50 to 18.00     |
| No. 1 agricultural cast              | 17.00 to 17.50     |
| Low phos. punchings                  | 16.00 to 16.50     |
| Locomotive tires, smooth             | 15.00 to 15.50     |
| Machine shop turnings                | 8.00 to 8.50       |
| Cast borings                         | 11.00 to 11.50     |
| Short shoveling turnings             | 11.00 to 11.50     |
| Stove plate                          | 14.50 to 15.00     |
| Grate bars                           | 12.75 to 13.00     |
| Brake shoes                          | 14.00 to 14.50     |
| Railroad malleable                   | 19.00 to 19.50     |
| Agricultural malleable               | 16.50 to 17.00     |

## Canadian Scrap Market

TORONTO, ONT., Aug. 7.—With a state of almost stagnation featuring the demand for iron and steel scrap in the Canadian market, prices have again been reduced by dealers. This reduction ranges from \$1 to \$3 per ton and takes in nearly all commodities handled in the Toronto market. In the Montreal market the reductions were not quite so pronounced and only two or three articles were affected. Despite the fact that dealers have reduced both their buying and selling prices, this has caused no improvement in consumer demand. Steel plants and foundries are buying only in limited tonnages for immediate use and only in an isolated case has a consumer bought for delivery covering the third quarter. Canadian dealers are offering the following prices for scrap.

### Dealers' Buying Prices, Per Gross Ton

|                       | Toronto | Montreal |
|-----------------------|---------|----------|
| Gross Tons            |         |          |
| Steel turnings        | \$10.00 | \$9.00   |
| Machine shop turnings | 10.00   | 9.00     |
| Wrought pipe          | 8.00    | 8.00     |
| Rails                 | 14.00   | 14.50    |
| No. 1 wrought scrap   | 14.00   | 15.00    |
| Heavy melting steel   | 14.00   | 12.00    |
| Steel axles           | 16.00   | 18.00    |
| Axles, wrought iron   | 18.00   | 22.00    |
| Net Tons              |         |          |
| Standard car wheels   | 15.00   | 16.00    |
| Malleable scrap       | 15.00   | 16.00    |
| Stove plate           | 15.00   | 16.00    |
| No. 1 machinery cast  | 19.00   | 21.00    |

## Detroit Scrap Prices Remain Unchanged

DETROIT, Aug. 7.—Melters are continuing to buy scrap for current needs only, although production schedules are set for third quarter in automotive lines. Stove and furnace manufacturers are operating on an 80 per cent basis. Radiator plants are about at capacity.

The following prices are quoted on a gross ton basis, f.o.b. cars producers' yards, excepting stove plate, automobile and No. 1 machinery cast, which are quoted on a net ton basis:

|                       |                    |
|-----------------------|--------------------|
| Heavy melting steel   | \$14.40 to \$15.00 |
| Shoveling steel       | 14.50 to 16.50     |
| No. 1 machinery cast  | 17.00 to 19.00     |
| Cast borings          | 9.75 to 10.75      |
| Automobile cast scrap | 21.00 to 22.00     |
| Stove plate           | 14.00 to 16.00     |
| Hydraulic compressed  | 11.50 to 12.50     |
| Turnings              | 7.25 to 8.25       |
| Flashings             | 9.50 to 10.50      |



## New York

### An Active Week in Pig Iron, with Concessions Still in Evidence

NEW YORK, Aug. 7.—Reliable estimates put the total of pig iron bought in the New York district in the past week at close to 20,000 tons. As a result of this activity, fewer inquiries are now before the furnace companies than was the case one week ago. For delivery to a Connecticut foundry, the tonnage closed through New York offices amounts to 2500 all for August delivery. A New Jersey buyer closed for 3000 tons for September and October, and a Jersey City foundry took 900 tons, deliveries running from September to November inclusive. For the various plants of a pump interest, 3000 tons were taken, deliveries to be in August and September. An electric company is reported to have bought 2000 tons. Other transactions of which details are not available indicate that one or two large companies have been buying recently on a considerable scale and that foundry operations are keeping up to the date of the second quarter. While from the standpoint of sellers \$25 is regarded as the existing base price, some furnaces are still inclined to waive the customary differentials on silicon and competition is therefore quite active. However, the purchases of the past week are construed as indications of the judgment of a number of large melters that the market is at least nearer the point of stabilization, even if it has not definitely made the turn.

We quote delivered in the New York district as follows, having added to furnace prices \$2.27 freight from eastern Pennsylvania, \$4.91 from Buffalo and \$5.44 from Virginia:

|  |                  |
|--|------------------|
| East. Pa. No. 1X fdy., sil. 2.75 to 3.25.... | \$27.77          |
| East. Pa. No. 2X fdy., sil. 2.25 to 2.75.... | 27.27            |
| East. Pa. No. 2, sil. 1.75 to 2.25....       | \$27.02 to 27.27 |
| Buffalo, sil. 1.75 to 2.25....               | 28.91 to 29.41   |
| No. 2X Virginia, sil. 2.25 to 2.75....       | 32.94            |
| No. 2 Virginia, sil. 1.75 to 2.25....        | 32.44            |

**Ferroalloys.**—Both demand and inquiry for ferromanganese is entirely absent and the market is dead. The only interesting feature is the fact that the July output of ferromanganese from American blast furnaces was the largest this year at over 26,400 tons. The highest previous record was in September, 1920. There have been a few sales of carload lots of spiegeleisen at \$47.50, furnace, but there is almost no inquiry. No developments are heard of in the manganese ore market. One seller reports inquiries for 100 tons of 50 per cent ferrosilicon, with the market exceedingly dull and prices unchanged at \$82.50 to \$85, delivered.

**Cast-Iron Pipe.**—The market continues active and demand has been such that many makers are booked up to the end of the year on some of the smaller sizes of pipe. Even on the larger sections deliveries are reported to be, as a rule, well into November. Few municipal tenders are reported current, but private buying is still good. It is expected by those in close touch with the situation created by the litigation over the award of 20,500 tons of water pipe in the Philippine Islands that a new call for bids will be issued in about a month. We quote per net ton, f.o.b. New York, in carload lots, as follows: 6-in. and larger, \$62.30; 4-in. and 5-in., \$67.30; 3-in., \$77.30, with \$5 additional for Class A and gas pipe. The soil pipe market continues weak and discounts show another five-point increase this week. At present prices makers claim that they are facing a loss on every ton of pipe sold and are booking practically all business in small lots for shipment at their convenience. At the prevailing schedule makers are generally refusing to consider forward business. We quote discounts on both Northern and Southern makers, f.o.b. New York, in carload lots, for prompt shipment, as follows: 6-in. standard, 39½ to 40% per cent off list; heavy, 49½ to 50% per cent off list.

**Finished Iron and Steel.**—No important steel tonnage is in the market except in the structural field, which is the active feature of today's steel market. A fresh crop of inquiries for building construction is up for bids. One large interest estimates that about a

dozen jobs, none less than 1000 tons, totaling about 33,000 tons, may be placed within the next week or two, bids having gone in on all of them. In addition there are many small jobs of 50 to a few hundred tons not included in the above total, which swell today's active structural projects in the New York district to 40,000 tons or more. Some estimates run as high as 50,000 tons, which is a substantial amount of work for this time of year. New inquiries include some sizable jobs, including 4000 tons for a highway bridge at Perth Amboy, N. J., 3000 tons for a girls' commercial high school in Brooklyn, 1100 tons for a newspaper building in Philadelphia, and a half dozen or more apartment houses in New York. Several new school-houses are soon to come up for bids. In tank work, still an active feature of the market, the Standard Oil Co. leads with an inquiry for 10,000 tons for erection at Bayway, N. J. Demand for steel products by manufacturing consumers is not in large proportion, most of the inquiries, of which there is an increasing number, being for small lots for early shipment. Steel mill representatives report their situation easy so far as deliveries are concerned, but absolutely firm as to prices. Current orders, though small, are filling in gaps in rolling schedules and encourage the mills to believe that orders will increase as deliveries on second quarter contracts are completed.

We quote for mill shipments, New York delivery, as follows: Soft steel bars, 2.74c.; plates and structural shapes, 2.84c.; bar iron, 2.74c.

**Coke.**—As a result of lowered production, due to the unprofitable prices recently made, a slight stiffening in the market is indicated. However, standard foundry coke is still available at \$5.50 per ton for prompt carloads. Prompt furnace coke graded as standard ranges from \$4.50 to \$5.25 per ton. A number of producers in the Connellsville and Latrobe districts have gone out rather than to continue concessions recently made. By-product coke is still quoted at \$11.34 to \$11.41, Newark and Jersey City.

**Old Material.**—Prices continue weak, heavy melting steel showing another slight decline this week. No. 1 yard steel is now bringing not to exceed \$15.50 per ton, delivered, eastern Pennsylvania. Borings and turnings are active but prices are extremely weak, some dealers offering as low as \$13.75 per ton, delivered, eastern Pennsylvania. Little or no tonnage is reported obtainable at such offers and a fair estimate of the buying price, New York, is \$9 to \$10 per ton on borings and turnings, \$9.50 to \$10 on machine shop turnings and \$9.50 to \$10 per ton on cast borings. As high as \$13 per ton is being offered on machine shop turnings, delivered, Phoenixville, Pa. Stove plate is fairly active. For Harrisburg, a delivered price of \$17 per ton is being paid. Specification pipe is stronger and up 50c. per ton. Dealers are quoting as high as \$14.50 per ton, delivered, Lebanon, Pa., on pipe.

Buying prices per gross ton, New York, follow:

|  |                    |
|--|--------------------|
| Heavy melting steel, yard.....                               | \$11.50 to \$12.00 |
| Steel rails, short lengths, or equivalent.....               | 12.50 to 13.00     |
| Rails for rolling.....                                       | 16.00 to 18.00     |
| Relaying rails, nominal.....                                 | 25.00 to 28.00     |
| Steel car axles.....   | 19.00 to 20.00     |
| Iron car axles.....  | 25.00 to 26.00     |
| No. 1 railroad wrought.....                                  | 14.00 to 14.50     |
| Wrought iron track.....                                      | 13.50 to 14.00     |
| Forge fire.....  | 9.50 to 10.00      |
| No. 1 yard wrought, long.....                                | 13.00 to 13.50     |
| Cast borings (clean).....                                    | 9.50 to 10.00      |
| Machine-shop turnings.....                                   | 9.50 to 10.00      |
| Mixed borings and turnings.....                              | 9.00 to 10.00      |
| Iron and steel pipe (1 in. diam., not under 2 ft. long)..... | 10.25 to 10.75     |
| Stove plate.....   | 12.75 to 13.25     |
| Locomotive grate bars.....                                   | 12.50 to 13.50     |
| Malleable cast (railroad).....                               | 18.00 to 19.00     |
| Cast-iron car wheels.....                                    | 17.00 to 18.00     |

Prices which dealers in New York and Brooklyn are quoting to local foundries per gross ton follow:

|  |                    |
|--|--------------------|
| No. 1 machinery cast.....  | \$19.00 to \$20.00 |
| No. 1 heavy cast (columns, building materials, etc.), cupola size..... | 18.00 to 19.00     |
| No. 1 heavy cast, not cupola size.....                                 | 16.00 to 17.00     |
| No. 2 cast (radiators, cast boilers, etc.).....                        | 16.00 to 17.00     |

**Warehouse Business.**—Warehouses continue to report a fairly good business, activity this month being about on a par with the average of July. In general, prices are fairly firm with the exception of quotations on black and galvanized sheets, sales of which are still

reported to have occurred at as low as 4.50c. and 5.50c. per lb., base, respectively. Such quotations are said to be more isolated this week than in the several previous weeks and a fair estimate of the sheet market is probably 4.65c. to 5.00c. per lb. on black and 5.65c. to 6.00c. per lb. on galvanized. Sellers of wrought iron and steel pipe report better mill shipments and slightly less inclination to shade scheduled prices. We quote prices on page 388.

## St. Louis

### Better Buying in Pig Iron—Notable Steel Inquiries From Railroads

ST. LOUIS, Aug. 7.—Demand has been better than for several months, and orders and inquiries were more numerous for larger tonnages as well as those for a carload up to 100 tons. While the market was off \$1 a ton earlier in the week on Northern iron, it is now firmer, with an expectation of a slight recovery in price. One inquiry before the market was for 5000 tons of basic iron for a melter in the St. Louis industrial district. An Indiana melter is in the market for 1000 tons of malleable. A St. Louis melter wants 200 to 400 tons of malleable, while another local consumer wants 200 tons of high silicon iron. There are scattering inquiries for carloads and upward, amounting to 300 tons. The St. Louis Coke & Iron Co. sold 500 tons to a local melter who is negotiating for an additional 500 tons of foundry iron. The same maker sold 2500 tons of off grade basic iron in scattering lots and 400 tons of other grades to melters in the district. Two Southern makers are now quoting \$24, Birmingham, and this may be said to be the market, although others are quoting higher prices. A noticeable feature here is that melters are pressing makers for shipments against contracts and there are very few holdups of shipments.

We quote delivered consumers' yards, St. Louis, as follows, having added to furnace prices \$2.16 freight from Chicago, \$3.28 from Birmingham (rail and water), \$5.17 from Birmingham, all rail, and 81 cents average switching charge from Granite City:

|  |         |
|--|---------|
| Northern fdy., sil. 1.75 to 2.25.....      | \$29.16 |
| Northern malleable, sil. 1.75 to 2.25..... | 29.16   |
| Basic .....                                | 29.16   |
| Southern fdy., sil. 1.75 to 2.25.....      | 29.17   |

**Finished Iron and Steel.**—Railroad inquiries were the most important feature of the market during the week. These inquiries included:

Missouri Pacific Railway, 400,000 tie plates for 75, 85 and 90-lb. rails, about 2000 tons; miscellaneous structural material, 100 tons; carload of bolts.

Terminal Railway Association, St. Louis, 750 kegs of spikes.

Wabash Railway, carload of fire box plates.  
Cotton Belt, carload of plates.

Fabricators are doing a good business, but principally in small orders, one interest here reporting the sale of 700 tons during July in quantities of 30 to 60 tons. The small-order business is continuing in August. Jobbers continue buying only from hand to mouth.

For stock out of warehouse we quote: Soft steel bars, 3.35c. per lb.; iron bars, 3.35c.; structural shapes, 3.45c.; tank plates, 3.45c.; No. 10 blue annealed sheets, 4.45c.; No. 28 black sheets, cold rolled, one pass, 5.20c.; cold drawn rounds, shafting and screw stock, 4.45c.; structural rivets, 4.15c.; boiler rivets, 4.25c.; tank rivets,  $\frac{1}{4}$  in. and smaller, 50-5 per cent off list; machine bolts, 45-5 per cent; carriage bolts, 40-5 per cent; lag screws, 50-5 per cent; hot pressed nuts, square or hexagon blank, \$2.50; and tapped, \$2.50 off list.

**Coke.**—The market for coke generally is weak because of overproduction. Connellsville coke is selling at \$5.75 to \$7 at the ovens. A better demand for domestic coke from dealers is reported by by-product concerns here.

**Old Material.**—A few specialties show advances this week; otherwise the list is unchanged. Generally there is a firmer tone. Rolling mill grades are being sought, with only a few inquiries for melting grades. Dealers have about covered all of their short interests and are showing confidence in the market by buying to lay down. They feel that there will be more activity within

the next thirty days. The Baltimore & Ohio is out with a list of 21,000 tons of old material.

We quote dealers' prices f.o.b. consumers' works, St. Louis industrial district and dealers' yards, as follows:

| Per Gross Ton                              |                    |
|--|--------------------|
| Iron rails .....                           | \$16.00 to \$16.50 |
| Rails for rolling.....                     | 17.50 to 18.00     |
| Steel rails less than 3 ft.....            | 18.50 to 19.00     |
| Relaying rails, 60 lb. and under...        | 26.00 to 27.00     |
| Relaying rails, 70 lb. and over...         | 33.50 to 34.50     |
| Cast iron car wheels.....                  | 18.00 to 18.50     |
| Heavy melting steel.....                   | 16.50 to 17.00     |
| Heavy shoveling steel.....                 | 16.50 to 17.00     |
| Frogs, switches and guards cut apart ..... | 16.50 to 17.00     |
| Per Net Ton                                |                    |
| Heavy axles and tire turnings...           | 12.75 to 13.25     |
| Steel angle bars.....                      | 15.25 to 15.75     |
| Iron car axles.....                        | 27.00 to 27.50     |
| Steel car axles.....                       | 21.00 to 21.50     |
| Wrought iron bars and transoms             | 21.00 to 22.00     |
| No. 1 railroad wrought.....                | 15.00 to 15.50     |
| No. 2 railroad wrought.....                | 16.50 to 17.00     |
| Railroad springs.....                      | 19.00 to 19.50     |
| Cast iron borings.....                     | 12.50 to 13.00     |
| No. 1 bushelings.....                      | 16.00 to 16.50     |
| No. 1 railroad cast.....                   | 18.00 to 18.50     |
| No. 1 machinery cast.....                  | 18.50 to 19.00     |
| Railroad malleable .....                   | 17.00 to 17.50     |
| Machine shop turnings.....                 | 11.50 to 12.00     |
| Champion bundled sheets.....               | 9.00 to 9.50       |

## Birmingham

### Pig Iron Buying Dull, but No Disposition to Curtail Production

BIRMINGHAM, Aug. 7.—The Birmingham pig iron market may be summed up as follows: All Birmingham district makers and all other makers continue holding for \$27 and make scattering sales for prompt Southern delivery. They do not mark down at all, because there has been no purchasing movement and any drop, they say, would mean another. The one-stack maker offering remainder of third-quarter make over a month ago at \$25 and reducing base two weeks ago to \$24, had on the first of the month an unsold quarter make of 1500 tons, showing that it had taken five to six weeks to dispose of 18,000 to 20,000 tons on a \$24 and \$25 base. A leading maker expressed the attitude to a nicety, saying: "We stand pat and shall so long as we move the iron." Some iron, about 200 tons, was sold in St. Louis at \$24.50. It was a resale transaction based on iron bought two months ago from one of the makers now holding at \$27. The maker selling at \$24 has booked some iron for fourth quarter in conjunction with that taken for third quarter. He will be out of market as soon as all third-quarter capacity is taken. There seems to be no disposition to curtail production. Alabama production in the seven months of the year was 1,680,000 tons, an increase over 1922 of 47 per cent, and is at a rate of 2,880,000 tons a year, compared with the record of 2,950,000 tons in 1917. Soil pipe factory hold-ups are the principal cause of yard accumulations in July. No perceptible decrease in melt in the South is elsewhere noticeable.

We quote per gross ton f.o.b. Birmingham district furnaces as follows:

|                                 |                  |
|---------------------------------|------------------|
| Foundry, silicon 1.75 to 2.25.. | \$24.00          |
| Basic .....                     | \$23.00 to 26.00 |
| Charcoal, warm blast .....      | 33.00 to 34.00   |

**Finishing Mills.**—Wire drawing mills report slight improvement in new business with indications of increased briskness in the near future. Operations remain on full turn on back-log of orders covering five to six weeks. Tennessee company finishing mills operate at the accustomed capacity with the new merchant bar mill at about 6000 tons a month. The Tennessee company turns out an average of 25 steel cars daily. Cotton ties are brisk. Structural steel shops have all they can handle.

**Cast Iron Pipe.**—The American Cast Iron Pipe Co. has booked 350 tons for Rio Grand, Porto Rico; 680 tons for Rosedale, Kan., and 1153 tons for Los Angeles. The United States Cast Iron Pipe Co. has booked 700 tons for De Land, Fla.; 800 tons for Van Buren, Ark., and 5000 ft. for a Birmingham utility, all specifying De Lavaud pipe. The base is \$49. Soil pipe is dull,



with a half dozen shops down and the price \$50 to \$55 base.

**Old Material.**—The scrap market has been very dull and outgo from yards has been at a minimum. Prices are barely maintained.

We quote per gross ton f.o.b. Birmingham district yards, nominal prices, as follows:

|                            |                    |
|----------------------------|--------------------|
| Old steel rails.....       | \$16.00 to \$18.00 |
| No. 1 steel.....           | 14.00 to 16.00     |
| No. 1 cast.....            | 20.00 to 21.00     |
| Tram car wheels.....       | 20.00 to 21.00     |
| Car wheels.....            | 19.00 to 20.00     |
| Stove plate.....           | 15.00 to 16.00     |
| Machine shop turnings..... | 10.00 to 12.00     |
| Cast iron borings.....     | 10.00 to 12.00     |

Eastern interests are still at work on a project for purchase of the properties of the Pratt Consolidated Coal Co., which they have several times tried to acquire during the past year. It is understood that the deal was twice within an ace of going through when unexpected deaths of interested parties interrupted. The Pratt Consolidated Coal Co. has not given an option but named a price at which it will sell. This is understood to be from \$7,000,000 upward. This company was the largest independent producer in Alabama prior to organization of the De Bardeleben Coal Corporation on a merger of the Empire, Corona and De Bardeleben Coal companies.

## Cincinnati

### Dips Last Week in Both Southern and Northern Pig Iron

CINCINNATI, Aug. 7.—The market is showing a little more activity, and some fair sales of pig iron were made last week. This activity may have been caused by the fact that one furnace in southern Ohio offered a limited tonnage on the basis of \$25.50, and melters felt that this price was a good one. On the other hand, evidence is not lacking that stocks in foundry yards are pretty well used up, and melters in order to run have found it necessary to buy iron. The buyers, however, are cautious, and orders placed are generally for only enough iron to keep running for 30 days. There is little inclination on the part of melters to cover for third or last quarter. Prices are inclined to firm up. In southern Ohio it is said that \$26 is the minimum today. Last week, however, \$25 could be done on an attractive lot, with \$25.50 being quoted on lots up to 200 tons. The furnace making this price, however, advanced its price to \$26, and this appears to be the lowest price at which iron can be had today from the Iron-ton district. An Indianapolis melter is reported to have bought 2000 tons of malleable iron from a Lake front steel making interest at \$26.77 delivered, or less than \$24 Iron-ton basis, and an eastern Indiana melter is reported to have bought 500 tons at approximately the same figure. A southern Ohio melter bought 500 tons at \$25.50 Iron-ton, and numerous sales of lots ranging from car loads to 200 tons were made at \$25.50 and \$26. On Southern iron there is little to report, although it is said that small tonnages of high silicon iron were sold at a price that figures back to \$23.50 Birmingham. The open quotation is still \$24, but on an attractive tonnage it is said that this price can be beaten. With Northern iron selling at \$26, there is little chance of Southern iron coming north of the Ohio at today's prices. We note one sale of 700 tons of Tennessee iron at \$24 Birmingham. There is no activity in basic or Bessemer. An inquiry for 1000 tons of silvery is expected to come out this week. Silvery producers are looking for a stronger market during the fourth quarter, and at least one of them will not quote present prices for this delivery.

Based on freight rates of \$4.05 from Birmingham and \$2.27 from Iron-ton, we quote f.o.b. Cincinnati:

|  |         |
|--|---------|
| Southern coke, sil. 1.75 to 2.25 (base)....        | \$28.05 |
| Southern coke, sil. 2.25 to 2.75 (No. 2 soft)..... | 28.55   |
| Ohio silvery, 8 per cent.....                      | 36.77   |
| Southern Ohio coke, sil. 1.75 to 2.25 (No. 2)..... | 28.27   |
| Basic Northern.....                                | 27.27   |
| Malleable.....                                     | 28.27   |

**Sheets.**—An improved demand is reported. Automobile body and lamp manufacturers have placed some fair sized orders this week, and reports indicate that operations this fall will be just as heavy in this line of manufacture as was the case in the first half. While reports are heard of black sheets being offered at 3.75c., this price could only be done on larger tonnages, and from only one mill in the northern part of the State. Blue annealed and galvanized prices are firm, and strength is also shown in the quotations on automobile body sheets.

**Cast Iron Pipe.**—There seems to be no let-up in buying. Covington, Ky., has placed 210 tons with a nearby producer. Cincinnati will take bids Aug. 13 on 100 tons, and Newport, Ky., will take bids Aug. 16 on 2800 ft. of 16-in., or about 250 tons.

**Warehouse Business.**—Local jobbers report business fair, though not so brisk as in June or July. August usually is a quiet month, so not much significance is attached to the slump. Prices continue as last quoted, and there is no evidence at hand of reduction being made.

Cincinnati jobbers quote: Iron and steel bars, 3.50c.; reinforcing bars, 3.60c.; hoops, 4.55c.; bands, 4.25c.; shapes, 3.60c.; plates, 3.60c.; cold-rolled rounds, 4.50c.; cold-rolled flats, squares and hexagons, 5c.; No. 10 blue annealed sheets, 4.25c.; No. 28 black sheets, 5.35c.; No. 28 galvanized sheets, 6.35c.; No. 9 annealed wire, \$3.60 per 100 lb.; common wire nails, \$3.60 per keg base.

**Tool Steel.**—A slight improvement is noted in the demand for tool steel. Sales during the month of July fell off sharply from June, but evidences are not lacking of better demand to come. Prices are steady at 75c. to 95c. per lb. for 18 per cent tungsten steel.

**Finished Materials.**—There is a continued fair demand for finished materials in small tonnages. While two to three weeks delivery on plates is now being freely offered, there is no evidence of lower prices than 2.50c., Pittsburgh, being made. Some plates are being shipped into this district from eastern Pennsylvania mills. On bars there is little current activity, and while most mills are reported to be booked for six to eight weeks ahead, one of the independent mills was quoting bars in this market for two weeks' delivery at a 2.65c. basis. Shapes are in fair demand. There is little activity in wire products, with the exception of nails, but the delivery situation is reported to be showing little improvement. Track accessories are very quiet. The only structural project of importance to come up was for a power plant at Omaha, financed by Louisville capitalists. Tank builders report an unprecedented amount of work on inquiry from power plant projects throughout the country. Reinforcing bars are fairly active, but inquiries run generally to small tonnages. There is some talk of prices being shaded \$2 per ton, but nothing authentic has been developed.

**Coke.**—There is little activity in either furnace or foundry fuels. Prices of New River coke have been reduced 50c. to \$1 per ton, foundry coke now being obtainable at \$11 per net ton at ovens. No changes are reported in Pocahontas, Wise County or by-product prices.

**Old Material.**—A steel works interest in this district is in the market for a small tonnage of heavy melting steel for August delivery, but has indicated the price which it is willing to pay as about \$15.50 delivered. Prices generally are lower, with offerings somewhat heavier.

We quote dealers' buying prices, f.o.b. cars Cincinnati:

| Per Gross Ton                     |                    |
|-----------------------------------|--------------------|
| Bundled sheets.....               | \$12.50 to \$13.00 |
| Iron rails.....                   | 15.00 to 15.50     |
| Relaying rails, 50 lb. and up.... | 28.00 to 28.50     |
| Rails for rolling.....            | 16.00 to 16.50     |
| Heavy melting steel.....          | 14.50 to 15.00     |
| Steel rails for melting.....      | 14.50 to 15.00     |
| Car wheels.....                   | 14.50 to 15.00     |

| Per Net Ton                           |                |
|---------------------------------------|----------------|
| No. 1 railroad wrought.....           | 12.50 to 13.00 |
| Cast borings.....                     | 9.00 to 9.50   |
| Steel turnings.....                   | 8.50 to 9.00   |
| Railroad cast.....                    | 16.00 to 16.50 |
| No. 1 machinery cast.....             | 18.50 to 19.00 |
| Burnt scrap.....                      | 11.50 to 12.00 |
| Iron axles.....                       | 21.50 to 22.00 |
| Locomotive tires (smooth inside)..... | 13.50 to 14.00 |
| Pipes and flues.....                  | 8.50 to 9.00   |



## Cleveland

### Dullness Again in Pig Iron, With Prices Weak—Steel Firm

CLEVELAND, Aug. 7.—With a movement of 10,411,248 gross tons ore shipments from Lake Superior iron mines in July broke all previous records, with one exception—July, 1918, when the movement was 10,659,206 tons. This is the fourth time that shipments in one month have exceeded 10,000,000 tons. July and August, 1917, had movements of 10,241,633 tons and 10,146,786 tons, respectively. July shipments showed a gain of 1,468,912 tons over July, 1922. The movement up to Aug. 1 was 26,596,731 tons, or an increase of 9,303,218 tons, or nearly 54 per cent, over the corresponding period last year.

**Pig Iron.**—Following the increased demand of the preceding week the market during the past week has relapsed into dullness and basic has developed marked weakness. Although most of the basic disposed of in the Valley has been by reselling and although one Cleveland furnace has within a few days sold 1000 tons at \$25, Valley furnaces have figured in some transactions at \$24, which may now be regarded as the ruling Valley price on basic, a decline of \$1 since last week. One Cleveland producer who recently sold a round tonnage of foundry iron has reduced his price from \$27 to \$26.50, furnace, and is selling for the fourth quarter. Very low prices are being made at Buffalo, \$24 being the price most frequently heard on No. 2 foundry. A Cleveland firm quoted \$25 western New York furnace on No. 2 foundry to a New England buyer, who expressed confidence that he could place the order at less than \$24. A few sales of Southern iron have been made on a basis of \$24.50, Birmingham. Low phosphorus is weak and has declined to \$32, Valley furnace, or \$1 below the recent nominal quotation.

Quotations below, except on basic and low phosphorus iron, are delivered Cleveland, and for local iron include a 50c. switching charge. Ohio silvery and Southern iron prices are based on a \$3.02 freight rate from Jackson and \$6 rate from Birmingham:

|   |         |
|---|---------|
| Basic, Valley furnace.....                  | \$24.00 |
| Northern No. 2 fdy., sil. 1.75 to 2.25..... | 26.50   |
| Southern fdy., sil. 1.75 to 2.25.....       | 30.50   |
| Malleable .....                             | 26.50   |
| Ohio silvery, 8 per cent.....               | 37.52   |
| Standard low phos., Valley furnace.....     | 32.00   |

**Bolts, Nuts and Rivets.**—Specifications on nuts and bolts are coming in satisfactorily. One company reports that July was next to the best of any month this year, but new business is coming in slowly. Competition is not so keen as it was, and this is attributed to the fact that manufacturers realize that the new bar card of extras will result in a considerable increase in the cost of their materials. In castellated nuts business is rather slow, owing to decreased demand from automobile manufacturers, but prices are being maintained. On rivets, the ruling quotation in this market is now \$3.25 on large structural rivets and \$3.35 on large boiler rivets, but reports of shading from \$1 to \$3 in other territories are heard.

**Sheets.**—Demand shows some improvement and there is not so much talk about price shading. Doubtless black sheets can be had at 3.75c. per lb., but concessions are not freely granted.

**Reinforcing Bars.**—Salesmen who have returned to Cleveland from territory covering several hundred miles report a gratifying increase in the number of new projects, including school buildings and other public enterprises. Rail steel reinforcing bars are quoted at 2.30c. to 2.35c.

**Semi-Finished Steel.**—On sheet bars, billets and slabs, \$42.50 is still being quoted, but almost no business is being done and the quotation is considered nominal and likely to be reduced on a test.

**Finished Material.**—The volume of new business is not large but many inquiries for rather small tonnages indicate encouraging increase in business and, on the whole, the prevailing sentiment is more cheerful. On structural material a number of projects which had been pending, including the Penn Harris Hotel, Harrisburg,

Pa., 640 tons; the Allerton Hotel, Cleveland, 1500 tons and the plant of the Cleveland Stone Co., Amherst, Ohio, 200 tons, are expected to be closed in a few days. The Niagara Falls Hotel, 1300 tons, seems also to be near the closing point. The Forest City Steel & Iron Co. has taken contracts to fabricate a number of jobs, most of which are for less than 100 tons each. In the bar market the new card of extras is having a tendency to check any cancellation of tonnage which has been contracted for under the lower extras which previously prevailed. As the time for the beginning of the establishment of the shorter day in the steel industry approaches, more thought is being given to the probable effect on costs and the fact that there will be an increase is undoubtedly having some influence in steadying the market. The tonnage for the new Union Railroad Station, which will ultimately amount to about 75,000, is not being seriously considered at the present time, as it is not expected that bids will be called for this year. The tin plate market is active. The demand for hoops and bands is less than for any other finished material.

**Warehouse Business.**—Demand continues in a fairly satisfactory volume and although there has been some shading reported on galvanized sheets, prices are being well maintained for the most part.

Jobbers quote steel bars, 3.36c.; plates and structural shapes, 3.46c.; No. 9 galvanized wire, 3.70c.; No. 9 annealed wire, 3.25c.; No. 28 black sheets, 4.65c.; No. 28 galvanized sheets, 5.80c.; No. 10 blue annealed sheets, 3.75c. to 4.06c.; cold rolled rounds, 3.90c.; flats, squares and hexagons, 4.40c.; hoops and bands, 1 in. and wider and 20 gage or heavier, 4.16c.; narrower than 1 in. or lighter than No. 20 gage, 4.60c.

**Alloy Steel.**—Two of the leading automobile manufacturers of Cleveland have reduced production 30 per cent and effect is being felt in the decreased demand for alloy steels. Prices are, however, being maintained.

**Coke.**—There is a fair demand for foundry coke and prices show a slight increase in firmness. We quote standard Connellsville foundry coke at \$5.50 to \$7 for prompt shipment. Virtually nothing is being done on contracts.

**Old Material.**—The downward trend seems to have been checked, but the market is extremely dull and prices are untested.

We quote dealers' prices f.o.b. Cleveland per gross ton:

|                                  |                    |
|----------------------------------|--------------------|
| Heavy melting steel, nominal.... | \$15.75 to \$16.00 |
| Rails for rolling .....          | 17.25 to 18.00     |
| Rails under 3 ft.....            | 17.25 to 17.50     |
| Low phosphorus melting.....      | 18.50 to 19.00     |
| Cast borings .....               | 11.00 to 11.50     |
| Machine shop turnings.....       | 9.75 to 10.00      |
| Mixed borings and turnings.....  | 9.75 to 10.00      |
| Compressed sheet steel.....      | 13.00 to 13.50     |
| Railroad wrought .....           | 12.25 to 12.75     |
| Railroad malleable .....         | 20.50 to 21.00     |
| Light bundle sheet stampings.... | 9.00 to 10.00      |
| Steel axle turnings.....         | 14.00 to 14.50     |
| No. 1 cast.....                  | 18.50 to 19.50     |
| No. 1 busheling.....             | 9.75 to 10.00      |
| Drop forge flashings.....        | 9.75 to 10.00      |
| Railroad grate bars.....         | 12.00 to 12.50     |
| Stove plate.....                 | 12.00 to 12.50     |
| Pipes and flues.....             | 9.00 to 9.50       |

Blast furnace No. 4, of the Steelton, Pa., plant of the Bethlehem Steel Corporation, was banked on Aug. 4. All furnaces of the plant had been in operation since March, but prior to that time several had been idle since 1920. One hundred men are affected by the banking of the furnace, but these have been transferred to other departments of the Steelton plant.

Buildings of the American Puddled Iron Co., Youngstown, formerly the Youngstown Steel Co., have been completed at the plant site north of Warren, Ohio, and equipment is now being installed. The company expects to begin operations in October.

The Maryland plant of the Bethlehem Steel Corporation, Sparrows Point, Md., has placed four of its five new open-hearth steel furnaces in operation. The fifth is expected to be ready for operation within a few weeks.

## Boston

### Pennsylvania Furnaces Take Business at \$25 a Ton Base and Less

BOSTON, Aug. 7.—Eastern Pennsylvania furnaces took the bulk of the estimated 10,000 tons of pig iron sold in this territory the past week. Such iron sold at \$25 furnace or \$28.65 delivered for No. 2 plain and silicon 2.25 to 2.75 per cent, and at \$28.65 and \$29.15 for No. 1 X in a majority of instances. But \$24.50 furnace base was done early in the week, and one melter in the market for 6000 to 8000 tons fourth quarter iron claims he can do better than \$25 furnace base today. Few furnaces will accept fourth quarter business, however, because of the fuel outlook. Others doing less than \$25 heretofore now quote \$25 base and \$25.50 for No. 2 X. Still others quote \$25.50 and \$26, respectively. The undertone of the eastern Pennsylvania iron market therefore appears steadier. A Providence, R. I., foundry is reported to have bought 1250 tons, silicon around 4 per cent, Virginia, at \$25 furnace through a New York house. The price cannot be substantiated here. Virginia No. 2 X and No. 1 X sold at \$26 furnace base. Buffalo No. 2 plain and No. 2 X hold at \$25 furnace or \$29.91 delivered, and nothing new pricewise has developed in Alabama, consequently these irons have not figured to any extent in recent business.

We quote delivered prices on the basis of the latest reported sales as follows, having added \$3.65 freight from eastern Pennsylvania, \$4.91 from Buffalo, \$5.92 from Virginia, and \$9.60 from Alabama.

|                                     |                    |
|-------------------------------------|--------------------|
| East. Penn., sil. 2.25 to 2.75..... | \$28.65 to \$29.65 |
| East. Penn., sil. 1.75 to 2.25..... | 28.65 to 29.15     |
| Buffalo, sil. 2.25 to 2.75.....     | 29.91 to 30.41     |
| Buffalo, sil. 1.75 to 2.25.....     | 29.91 to 30.41     |
| Virginia, sil. 2.25 to 2.75.....    | 32.42 to 32.92     |
| Virginia, sil. 1.75 to 2.25.....    | 31.92 to 32.42     |
| Alabama, sil. 2.25 to 2.75.....     | 35.10 to 37.10     |
| Alabama, sil. 1.75 to 2.25.....     | 34.60 to 36.60     |

**Coke.**—The outstanding feature of the fuel market is the pressure on New England by-product companies for domestic coke. Both the New England Coal & Coke Co. and the Providence Gas Co. are booked to capacity on such fuel practically for the remainder of 1923. So far, both companies have filled specifications against foundry coke contracts on schedule, although minor important delays on loadings have cropped up the past few days. The indicated curtailment in coke production in the Connellsville district further strengthens the position of New England foundry coke makers. By-product foundry coke is still quoted at \$13.50 a ton delivered within New England.

**Old Material.**—Hopes entertained last week that business was on the mend have evaporated. Business is almost at a standstill. Holders of material generally anticipate better business in September and consequently are not anxious to sell at going prices. One house the past week sent out offers on mixed borings to seventy firms and received but one acceptance. Offers to buy chemical borings at \$11.50, made by another firm, brought out four car lots. Offers to buy heavy melting steel at \$12 on cars at shipping point fail to attract sellers. Brokers are buying some No. 1 machinery cast at \$19 on cars, for storage purposes.

The following prices are for gross ton lots delivered consuming points:

|                           |                    |
|---------------------------|--------------------|
| No. 1 machinery cast..... | \$22.00 to \$23.00 |
| No. 2 machinery cast..... | 20.00 to 21.00     |
| Stove plate .....         | 15.50 to 16.50     |
| Railroad malleable .....  | 24.00 to 24.50     |
| Street car axles.....     | 21.00 to 21.50     |

The following prices are offered per gross ton lots f.o.b. Boston common rate shipping points:

|   |                    |
|---|--------------------|
| No. 1 heavy melting steel.....                      | \$11.50 to \$12.00 |
| No. 1 rail wrought.....                             | 12.50 to 13.00     |
| No. 1 yard wrought.....                             | 11.50 to 12.00     |
| Wrought pipe (1-in. in diam., over 2 ft. long)..... | 8.50 to 9.00       |
| Machine shop turnings.....                          | 8.00 to 8.50       |
| Cast iron borings, rolling mill.....                | 10.50 to 11.00     |
| Cast iron borings, chemical.....                    | 11.50 to 12.00     |
| Blast furnace borings and turnings .....            | 8.00 to 8.50       |
| Forged scrap and bundled skeleton .....             | 9.00 to 9.50       |
| Shafting .....                                      | 18.00 to 18.50     |
| Street car axles.....                               | 18.00 to 18.50     |
| Rails for rerolling.....                            | 13.00 to 13.50     |
| Stove plate* .....                                  | 11.00 to 12.00     |

\*For Pennsylvania shipment.

## Buffalo

### Pig Iron Lifeless, but Improvement in Steel Broad in Scope

BUFFALO, Aug. 7.—Two furnaces have been blown out—the first in the expected curtailment of operations since the depression started. Rumors of one producer's intending to bank several stacks are not confirmed. Only one seller is able to report any life to the market; another finds demand has fallen off and is even slower than the preceding week. This is especially true in New England where eastern Pennsylvania furnaces are quoting lower prices than Buffalo sellers and at the same time enjoy an advantage of \$1.26 in freight rates. Inquiries include 15,000 to 20,000, including one lot of 5000 tons. The remainder is made up of less tonnages mostly in the carload to 100-ton lots. Sales total about 10,000 tons in scattered lots. Not any of the local sellers will admit any shading of the \$25 base price, although all encounter rumors of \$24.50 for silicon of 1.75 to 2.25 per cent being quoted in the immediate selling area. A small lot of silicon 2.25 to 2.75 brought \$25.50.

We quote f.o.b. per gross ton Buffalo as follows:

|                                       |         |
|---------------------------------------|---------|
| No. 1 foundry, 2.75 to 3.25 sil.....  | \$26.00 |
| No. 2X foundry, 2.25 to 2.75 sil..... | 25.50   |
| No. 2 plain, 1.75 to 2.25 sil.....    | 25.00   |
| Basic .....                           | 26.00   |
| Malleable .....                       | 26.00   |
| Lake Superior charcoal.....           | 32.28   |

**Finished Iron and Steel.**—Quietness generally felt by pig iron sellers does not apply in the finished material field and both specifications and inquiry have been fairly lively. Prices on bars, shapes and plates are firm; the only exception encountered by sellers seems to be made to car builders who have been able to shade bar prices. Sheet and pipe business is brisk. Mill operations are on the same schedule and no immediate curtailment is in sight. Deliveries on bars are better and one mill lost several tonnages through the fact that a competitor offered delivery within two to three weeks—the best performance found in several months. All mills are now quoting the extra list on bars. The fact that the 8-hr. day is soon to become operative is expected to have the effect of holding present prices because of the increased cost of operation.

We quote warehouse prices, Buffalo, as follows:

|  |
|--|
| Structural shapes, 3.65c.; plates, 3.65c.; soft steel bars, 3.55c.; hoops, 4.65c.; bands, 4.35c.; blue annealed sheets, No. 10 gage, 4.45c.; galvanized steel sheets, No. 28 gage, 6.35c.; black sheets, No. 28 gage, 5.25c.; cold rolled round shafting, 4.70c. |
|--|

**Old Material.**—Except for a few occasional sales of heavy melting steel, business is stagnant. Prices are nominal and demand is at the lowest ebb of the year.

We quote f.o.b. gross ton Buffalo as follows:

|                                |                    |
|--------------------------------|--------------------|
| Heavy melting steel.....       | \$17.00 to \$18.00 |
| Low phos., 0.04 and under..... | 23.50 to 24.50     |
| No. 1 railroad wrought.....    | 15.00 to 16.00     |
| Car wheels .....               | 16.50 to 17.00     |
| Machine shop turnings.....     | 8.50 to 9.50       |
| Cast iron borings.....         | 15.00 to 16.00     |
| No. 1 bushelings.....          | 15.50 to 16.00     |
| Stove plate .....              | 17.00 to 17.50     |
| Grate bars .....               | 17.00 to 17.50     |
| Bundled sheet stampings.....   | 10.00 to 11.00     |
| No. 1 machinery cast.....      | 19.50 to 20.50     |
| Hydraulic compressed .....     | 15.00 to 16.00     |
| Railroad malleable .....       | 20.00 to 21.00     |

Railroad freight rate on limestone from the Hills-ville and Walford mining districts in Western Pennsylvania, near the Ohio line, will be reduced from 76c. to 55c. per ton to points in the Mahoning and Shenango Valleys, effective Sept. 15. The cut to the Mary blast furnace at Lowellville, operated by the Sharon Steel Hoop Co., will be from 50c. to 36c. per ton. About 1200 lb. of limestone are used in the manufacture of each ton of pig iron and the saving per ton, therefore, will be from 12c. to 13c. The reduced rate was granted by the Central Freight Association, following a request by H. D. Rhodehouse, manager of the traffic bureau of the Youngstown Chamber of Commerce.



## Philadelphia

### Large Sales of Basic Pig Iron at \$25, Delivered —Steel Situation Still Quiet

PHILADELPHIA, Aug. 7.—With plans already under way in Eastern steel plants for the turnover to the 8-hr. day, attention in steel sales offices is largely centered upon the effect of this move upon the demand and selling prices of steel. While a high labor cost is expected under the new plan, methods are being developed in several organizations by which this cost may be lower than was at first counted upon. Men working in continuous process departments, such as the open-hearth plants, will be put on 8-hr. shifts and will receive an advance in their daily wage rate of 25 per cent, making their pay equivalent to a 10-hr. day rate on the present basis. The number of men employed in certain departments will be cut down, as for example in the open-hearth department, where one man will tend two or three furnace jobs instead of one. Whatever the effect of the 8-hr. day may be upon costs, the opinion is strong in selling offices that its inauguration will forestall any possibility of lower selling prices for the immediate future.

Certain developments of the past week have created a more hopeful feeling, foremost among these being the sale of about 40,000 tons or more of basic pig iron, which some observers hold to mark the turning point in the pig-iron market. Some grades of scrap appear also to be scraping bottom and accumulation is going on among consumers and yard dealers. A recovery in raw materials will, of course, have at least a sentimental effect on finished products.

Steel business is proceeding in a quiet way, there being a limited amount of new business as consumers are quite generally covered for about 60 days. The steel mills have substantial tonnages on their books for a similar period, the only exceptions being some of the Eastern plate and shape mills. In general, the latter have about a month's work ahead.

**Pig Iron.**—An Eastern plate mill has closed for 35,000 tons or more of basic pig iron for delivery through August, September and October and a Delaware steel company has bought not less than 5000 tons and may possibly take 10,000 tons. This business was divided among four or five furnaces, which made identical prices of \$25, delivered, on the large purchase. Added to the substantial sales of foundry iron of the past two or three weeks it has put the eastern Pennsylvania pig-iron situation on a firmer basis. Several furnaces are now quoting a minimum of \$25, furnace, on No. 2 plain and \$25.50 on No. 2X, but it remains to be seen whether some furnaces which have not taken large backlogs will follow these prices immediately, and in fact they have not been in effect long enough with the furnaces quoting them to become definitely established. Sales of foundry iron have been made within the past few days at \$24.50 for No. 2 plain and \$25 for No. 2X, and in a few instances 25c. a ton below these prices has ruled. About 100,000 tons of iron was sold by eastern Pennsylvania furnaces in July, and probably 15,000 to 20,000 tons has been closed since the first of the month. There is now very little inquiry and the buying movement is believed to be over for the present, so far as the larger tonnages are concerned. There is still a good deal of iron on furnace yards, stocks in July having increased fully 20,000 tons in this district, as much of the iron recently sold is for delivery over the next three months. Very little has been sold for November-December, and one furnace company feels so certain of at least a slight recovery in the market that it is declining to quote at all for fourth quarter. It might be said that this situation is not one-sided in that some of the most careful buyers in the East have not covered beyond October and do not show any present disposition to do so. Virginia iron at \$26, base, furnace, is not reaching this district as its high freight rate shuts it out in competition with low-priced Pennsylvania iron. There is very little activity in grades other than

foundry and basic, low phosphorus being particularly stagnant and weak. The Brooke furnace will probably be blown out within 10 days for relining.

The following quotations are, with the exception of those on low phosphorus iron, for delivery at Philadelphia and include freight rates varying from 76 cents to \$1.64 per gross ton:

|   |                    |
|---|--------------------|
| East. Pa. No. 2 plain, 1.75 to 2.25 sil.  | \$25.26 to \$26.64 |
| East. Pa. No. 2X, 2.25 to 2.75 sil.       | 25.76 to 26.14     |
| East. Pa. No. 1X                          | 26.26 to 26.76     |
| Virginia No. 2 plain, 1.75 to 2.25 sil.   | 31.17 to 31.67     |
| Virginia No. 2X, 2.25 to 2.75 sil.        | 31.67 to 32.67     |
| Basic delivered eastern Pa.               | 25.00              |
| Gray forge                                | 25.50 to 26.00     |
| Malleable                                 | 26.26 to 26.84     |
| Standard low phos. (f.o.b. furnace)       | 29.00 to 30.00     |
| Copper bearing low phos. (f.o.b. furnace) | 32.00 to 33.00     |

#### Foreign Pig Iron

|   |         |
|---|---------|
| All prices f.o.b. cars Philadelphia, duty paid.             |         |
| Continental foundry, 1.80 to 2.50 sil.                      | \$25.50 |
| Continental foundry, 2.50 to 3.25 sil.                      | 26.50   |
| Low phos., copper free, guar. not over 0.035 per cent phos. | 31.50   |
| Continental, phos. 1.50; sil. 2 to 3.                       | 25.50   |

**Ore.**—Large shipments of ore continue to come from abroad, last week's receipts including 19,822 tons of iron ore from Sweden, 3770 tons from Newfoundland and 7500 tons from Cuba, while 2004 tons of chrome ore came from British India.

**Ferroalloys.**—A slightly better inquiry has appeared for spiegeleisen, but furnace representatives who quote \$45, furnace, are losing orders, the supposition being that resale material is being offered at a few dollars less per ton. Ferromanganese is not in demand and prices remain at \$117.50, seaboard or domestic furnace.

**Billets.**—Ruling quotations by Eastern steel companies are \$42.50, Pittsburgh, on open-hearth rerolling billets and \$50, Pittsburgh, on forging billets, but the latter price does not always take the business, as lower quotations are being named by Pittsburgh mills.

**Plates.**—Of outstanding interest in the plate market is an inquiry from the Baltimore & Ohio Railroad for 5000 tons for repairing 1000 freight cars. This inquiry also carries with it about 1000 tons of bars and structurals. The Newport News Shipbuilding & Dry Dock Co. was low bidder on two Clyde Line boats, which will require about 3000 tons each of plates and probably 1000 tons each of other forms of steel. The Baltimore & Ohio is reported to be contemplating the purchase of 50 locomotives, but this has not yet become a definite inquiry. Eastern plate mills have on the average about 30 days' work, and one or two having bookings that run well into September. Nevertheless plates are easy to obtain for shipment in two or three weeks. Prices appear to be firm at 2.50c., Pittsburgh.

**Structural Material.**—The Belmont Iron Works has taken two jobs requiring about 2500 tons of steel, one the General Electric Co. plant in South Philadelphia and the other an insurance company office building in Philadelphia. Fabricators have two or three months' work ahead, and most of the mills have a fair volume of orders on their books, but new work is coming out slowly in this district. Prices are firm at 2.50c., Pittsburgh, except that one or two Eastern mills are accepting desirable tonnage at 2.40c.

**Bars.**—Steel bar demand is keeping up at a fair rate considering that most of the trade is getting sufficient steel on contract shipments. Current orders are filling in gaps in rolling schedules. Bar iron makers will issue a new card of extras this week. Steel and iron bars are quoted at 2.40c., Pittsburgh. Quotations of 2.35c. on bar iron are said to be less frequent.

**Sheets.**—A fairly satisfactory carload business is being done in sheets, which, however, are less active in this district than the heavier steel products. Prices appear to be firm, except in black sheets, quotations of 3.75c. occasionally appearing, though 3.85c., Pittsburgh, is being quoted by a majority of the mills. Blue annealed at 3c. and galvanized at 5c. are both firm in price.

**Coke.**—Eastern furnaces are not inclined to contract for coke for fourth quarter at \$5.50, Connellsville, the ruling quotation, and some of them are depending on the spot market for current requirements, spot coke being freely available at \$4.50. Foundry coke is to be had at \$5.50 for prompt shipment.

**Old Material.**—An upward turn of prices on old material may not be immediately at hand, but there are indications that both consumers and dealers believe that present levels are about the bottom. A few Eastern plants are quietly laying by stocks, believing apparently that scrap is a good purchase at present prices, and yard dealers are in many instances declining to sell, preferring to hold what they have for a possible rise. Scrap is in good supply, but a general program of accumulation by both consumers and dealers would not be an unexpected development under present conditions and would of course tend to strengthen the market. Heavy melting steel is off 50c. a ton, now being available at \$15.50 to \$16. Other grades remain substantially as quoted last week.

We quote for delivery at consuming points in this district as follows:

|  |                    |
|--|--------------------|
| No. 1 heavy melting steel.....                                   | \$15.50 to \$16.00 |
| Scrap rails .....  | 15.50 to 16.00     |
| Steel rails for rolling.....                                     | 17.00 to 18.00     |
| No. 1 low phos., heavy 0.04 and under .....                      | 21.50 to 22.50     |
| Cast iron car wheels.....  | 20.00 to 21.00     |
| No. 1 railroad wrought.....                                      | 18.00 to 19.00     |
| No. 1 yard wrought.....  | 17.00 to 18.00     |
| No. 1 forge fire.....  | 14.00 to 14.50     |
| Bundled sheets (for steel works)                                 | 13.50 to 14.00     |
| No. 1 busheling.....   | 15.50 to 16.00     |
| Mixed borings and turnings (for blast furnace use).....          | 12.50 to 13.50     |
| Machine shop turnings (for steel works use) .....                | 13.50 to 14.00     |
| Machine shop turnings (for rolling mill use).....                | 14.50 to 15.00     |
| Heavy axle turnings (or equivalent) .....                        | 14.50 to 15.00     |
| Cast borings (for steel works and rolling mills).....            | 15.00 to 15.50     |
| Cast borings (for chemical plants)                               | 18.00 to 19.00     |
| No. 1 cast.....  | 20.00 to 21.00     |
| Heavy breakable cast (for steel plants) .....                    | 18.50 to 19.00     |
| Railroad grate bars.....   | 17.00 to 18.00     |
| Stove plate (for steel plant use)                                | 17.00 to 17.50     |
| Railroad malleable .....   | 19.00 to 20.00     |
| Wrought iron and soft steel pipes and tubes (new specifications) | 15.00 to 15.50     |
| Shafting .....   | 22.00 to 24.00     |
| Steel axles .....  | 24.00 to 26.00     |

## RAILROAD EQUIPMENT BUYING

Fewer freight cars were in need of repair on July 15 than at any time since December, 1920. The number in need of repair on July 15 was 188,621, or 8.3 per cent of the number on line. The Class One railroads of the United States had in need of repair on July 15, 11,855 locomotives, or 18.6 per cent of the total number on line, an increase of 405 over the total number on July 1.

Some of the items of the week are the following:

The Missouri Pacific has placed 10 baggage, 12 chair cars and 18 passenger coaches with the American Car & Foundry Co. and 9 divided coaches, 3 club and 8 dining cars with the Pullman Co.

The Wabash has ordered 75 box car underframes from the American Car & Foundry Co.

The Mississippi River & Bonne Terre has withdrawn an inquiry for 50 box cars.

The International Harvester Co. is inquiring for 10 billet cars.

The Southern Railway has placed 1000 center sills with the Virginia Bridge & Iron Works.

The Philadelphia & Reading has awarded repairs on 500 steel hopper cars to the Standard Steel Car Co.

The New York Central has let repairs on 500 all-steel hopper cars for the Pittsburgh & Lake Erie to the Standard Tank Car Co.

The Canadian Pacific will build 1300 box cars in its own shops.

George N. Clemson, Middletown, N. Y., for the last 35 years engaged in manufacturing Star hack saw blades, will resume the manufacture of the general saw line which he discontinued about 30 years ago. Approximately \$500,000 will be expended on the first buildings. The new company will be called the Clemson Saw Co. Its line will include hand, cross-cut, solid and inserted tooth circular saws and wood band saws. Mr. Clemson is president; Richard D. Clemson, vice-president; W. E. Cross, secretary-treasurer; W. R. Batcheller, general manager. Construction is under way and it is expected operations will be started by Jan. 1.

## FABRICATED STEEL BUSINESS

### Week's Awards Only Fair Total, but Inquiries Still Quite Promising

Private enterprises continue to supply the bulk of business in fabricated steel. New inquiries exceed 21,000 tons in amount and of these 6100 are for public service work, 4500 tons for private buildings and 10,000 tons for oil tanks. Of 9000 tons of awards, about two-thirds were for private account. Awards included the following:

Loft building at Broadway and Twenty-ninth Street, New York, 350 tons, to George A. Just Co.

Salaam Temple, Newark, N. J., 950 tons, to Bethlehem Fabricators, Inc.

General Electric Co., manufacturing plant at South Philadelphia, 1700 tons, to Belmont Iron Works.

New York Edison Co., Forty-first Street and East River, New York, 750 tons for column cores; mentioned last week and now formally awarded to Post & McCord and American Bridge Co.

Colfax power station, Springdale, Pa., 450 tons, to Pittsburgh-Des Moines Steel Co.

New York & Queens Gas & Electric Co., building at Flushing, Long Island, 200 tons, to American Bridge Co.

Theater, Pittston, Pa., 250 tons, to McClintic-Marshall Co.

Apartment building at 760 Park Avenue, New York, 500 tons, to Post & McCord.

Cameron Public School, Chicago, 386 tons, to Duffin Iron Works.

State of Minnesota, bridge No. 4004, at Scanlon, 236 tons, to American Bridge Co.

Niagara Hotel, Niagara Falls, N. Y., 1000 tons, to Buffalo Structural Steel Co.

Garage in Pittsburgh, 200 tons, to Jones & Laughlin Steel Corporation.

Kentucky Hydro-Electric Co., transmission tower, 1700 tons, to American Bridge Co.

Phoenix Mortgage Co. building, Cleveland, 170 tons, to the Forest City Steel & Iron Co.

Cleveland Electric Illuminating Co. building, 108 tons, to the Forest City Steel & Iron Co.

General Accident, Fire & Life Assurance Co., Philadelphia, office building, 750 tons, to Belmont Iron Works.

### Structural Projects Pending

Inquiries for fabricated steel work include the following:

Standard Oil Co. of New Jersey, oil tanks to be erected at Bayway, N. J., 10,000 tons, mostly plates.

Highway bridge over Ashley River, South Carolina, 2100 tons.

State Highway Commission of New Jersey, highway bridge over Raritan River at Perth Amboy, 4000 tons.

Standard Oil Co., fourth section of office building at 18 Broadway, 800 tons.

Standard Oil Co., two boiler houses to be erected at Cleveland, 1700 tons.

Bulletin Building and annex, Philadelphia, 1100 tons.

Rock Island Lines, 10 girder spans, DeWitt, Neb., 540 tons.

Power plant, Omaha, Neb., for Louisville interests, 800 tons, bids asked.

The Colorado Fuel & Iron Co. has adopted the "suggestion system" with a view to giving every employee the opportunity to propose the best ideas of which he is capable for the betterment of operating methods and for economy in production. A statement of the system printed in several languages has been posted in conspicuous places on the premises, and assurance is given that every worthy suggestion shall get attention and that every employee shall receive full credit for his ideas. The names of those who make suggestions will be published in the company's bulletin. The plan provides that prompt acknowledgment of suggestions shall be made, stating whether further consideration shall be given and giving reasons when this consideration is not in order. Cash awards will be made for suggestions of merit.



## British Iron and Steel Market

**Pig Iron Dull—Ferromanganese for Export  
Lower—Rails Easier—Galvanized  
Sheets Firmer**

(By Cable)

LONDON, ENGLAND, Aug. 7.

Pig iron is dull, with prices weakening further. Steps are being taken to bank three Cleveland furnaces. Iron makers report that such a period of inactivity has not been experienced for several years.

Foreign ore is lifeless. Best Bilbao Rubio nominally is 23s. (\$4.24) ex-ship Tees.

English steel prices are unaltered but Scotch ship plates, angles and tees are down 5s. in the home market, to £10 and £9 15s. (2.04c. and 1.98c. per lb.) respectively.

Midland iron workers' wages have been advanced 7½ per cent, under the sliding scale arrangement.

France and the United States have secured contracts for constructional work for the Manchester Corporation. The French tender was £3,000 (\$13,680) and the American tender £1,400 (\$6,384) below the lowest British figure.

Trade in Continental iron and steel is difficult. Owing to the well-sold condition of the Belgian works, quotations practically are nominal. There are fresh feature offerings of French billets and wire rods by makers, not sellers, [for the first time] since the War.

Tin plate is steady but the revival of business has not been sustained. There is some domestic and export demand, but no substantial parcels are concerned. Welsh plants are remaining closed this week, for the holidays.

Galvanized sheets are strong, with continued demand from India, South America, Australia and South Africa. Makers are fully sold, up to the end of September. Thin gage sheets are in demand, except for Japan.

There is a strong Far Eastern demand for black sheets for November to January shipment. Most works are sold for three months ahead and some to the end of the year. Prices are firm. Japanese specifications are now £19 10s. (3.97c. per lb.).

We quote per gross ton, except where otherwise stated, f.o.b. makers' works, with American equivalent figured at \$4.56 per £1, as follows:

|                            |         |            |                  |
|----------------------------|---------|------------|------------------|
| Durham coke, delivered     | £2 1½s. |            | \$9.46           |
| Bilbao Rubio ore†          | 1 4     |            | 5.47             |
| Cleveland No. 1 foundry    | 5 10    |            | 25.08            |
| Cleveland No. 3 foundry    | 5 3     |            | 23.48            |
| Cleveland No. 4 foundry    | 5 0     |            | 22.80            |
| Cleveland No. 4 forge..    | 4 17½   |            | 22.23            |
| Cleveland basic            | 5 5     |            | 23.94            |
| East Coast mixed           | 5 0     |            | 22.80            |
| Ferromanganese             | 18 0    |            | 82.08            |
| Ferromanganese*            | 18 10   |            | 84.36            |
| Rails, 60 lb. and up       | 8 10    | to £9 10s. | 38.76 to \$43.32 |
| Billets                    | 7 5     | to 8 0     | 33.06 to 36.48   |
| Sheet and tin plate bars,  |         |            |                  |
| Welsh                      | 9 2½    |            | 41.61            |
| Tin plates, base box...    | 1 3     | to 1 3½    | 5.24 to 5.27     |
|                            |         |            | C. per Lb.       |
| Ship plates                | 9 10    | to 10 0    | 1.93 to 2.04     |
| Boiler plates              | 12 10   | to 13 0    | 2.54 to 2.65     |
| Tees                       | 10 0    | to 10 10   | 2.04 to 2.14     |
| Channels                   | 9 5     | to 9 15    | 1.88 to 1.98     |
| Beams                      | 9 0     | to 9 10    | 1.83 to 1.93     |
| Round bars, ¾ to 3 in.     | 10 15   | to 11 5    | 2.19 to 2.29     |
| Galvanized sheets, 24 g.   | 18 15   | to 19 0    | 3.72 to 3.87     |
| Black sheets, 24 gage..    | 13 10   |            | 2.75             |
| Black sheets, Japanese     |         |            |                  |
| specifications             | 15 5    |            | 3.10             |
| Steel hoops                | 12 0    | & 12 10*   | 2.44 & 2.54*     |
| Cold rolled steel strip,   |         |            |                  |
| 20 g.                      | 17 5    |            | 3.51             |
| Cotton ties, Indian speci- |         |            |                  |
| fications                  | 15 0    |            | 3.05             |

\*Export price. †Ex-ship, Tees, nominal.

**Continental Prices, All F. O. B. Channel Ports,  
Delivery as Specified**

|                   |        |            |                    |
|-------------------|--------|------------|--------------------|
| Foundry pig iron: |        |            |                    |
| Belgium           | £5 5s. | to £5 7½s. | \$23.94 to \$24.51 |
| France            | 5 5    | to 5 7½    | 23.94 to 24.51     |
| Luxemburg         | 5 5    | to 5 7½    | 23.94 to 24.51     |

|                 |        |          |              |
|-----------------|--------|----------|--------------|
| Billets:        |        |          |              |
| Belgium         | £7 5s. |          | \$33.06      |
| France          | 7 5    |          | 33.06        |
| Merchant bars:  |        |          | C. per Lb.   |
| Belgium         | 7 17½  | to 8 0   | 1.60 to 1.63 |
| Luxemburg       | 8 0    | to 8 5   | 1.63 to 1.68 |
| France          | 7 10   |          | 1.53         |
| Joints (beams): |        |          |              |
| Belgium         | 7 12½  | to 7 15  | 1.55 to 1.58 |
| Luxemburg       | 7 15   |          | 1.58         |
| France          | 7 10   | to 7 12½ | 1.53 to 1.55 |
| Angles:         |        |          |              |
| Belgium         | 8 0    | to 8 5   | 1.63 to 1.68 |
| ¾-in. plates:   |        |          |              |
| Belgium         | 8 5    | to 8 10  | 1.68 to 1.73 |
| ¾-in. plates:   |        |          |              |
| Luxemburg       | 7 15   |          | 1.58         |
| Belgium         | 7 10   |          | 1.53         |

**Pig Iron Prices Lower—Railroad Equipment  
Buying Good—Germany Taking  
Structural Material**

LONDON, ENGLAND, July 26.—Conditions in the pig iron markets do not show much improvement. Demand is only meager, in spite of the fact that prices are coming down; stocks at makers' works are reported to be approaching substantial quantities. How long this can continue it is difficult to say, but steps are being made to cut down production if more sales cannot be effected. There has been a spasmodic demand from the continent, more especially from Germany, for hematite, and some fair tonnages were sold, but other continental countries seem unable to entertain business, even though supplies may be wanted. Cleveland prices have fallen appreciably during the last fortnight, and today No. 3 G. M. B. is called by sellers at about 104s., and is quite plentiful while Scotch No. 3 foundry is offered at about 105c. East Coast hematite is quoted at 102s. 6d., and probably less would be taken in the event of an attractive order.

The finished iron and steel situation is a little better. Of course the whole question hangs upon the raw material market, but though pig iron prices have come down, there has been little alteration in the values of steel, makers asserting that present quotations leave little or no selling margin. Germany has been inquiring and has bought fair quantities of structural material, and other export markets have shown a little interest, but contracts for new ship building are few and far between. Apart from the thin sheet trade, the most active departments at the present time are the railroad material manufacturers. Recently the Metropolitan Carriage, Wagon & Finance Co., Ltd., of Birmingham secured good contracts for cars for South Africa. The Birmingham Wagon & Railway Carriage Co., Ltd., have orders for steel cars for the Central Argentine Railway. The Metropolitan Carriage, Wagon & Finance Co. and the Gloucester Carriage & Wagon Co. have been awarded contracts for cars for the Madras & Southern Mahratta Railway. In addition, the Birmingham Railway Carriage & Wagon Co. are busily engaged on the construction of 20 all-steel vestibuled corridor, sleeping and dining cars, for the Compagnie Internationale des Wagons Lits. In connection with the electrification scheme of the Southern Railway, two important contracts for motors and control gear have been awarded to the English Electric Co. and the Metropolitan Vickers Electric Co. The agreement consists of 508 traction motors each of 300 hp. with the appropriate controlling apparatus.

According to Lloyds Register of shipping, 1923-24 just published there was an increase in the steam tonnage owned in the world of 992,421 tons. The countries showing the largest increases were Germany, 702,665 tons, and Italy 167,407 tons. The largest decreases were the United States seagoing tonnage 141,471 tons, and in France 108,548 tons.

Additional plans for expansion are announced by the Peebles Mfg. Co., maker of railroad cranes, whose plant is located at Newton Falls in Trumbull County. Five new buildings will be erected, including a freight car repair structure, foundry, forge shop, machine shop and a building for storage of materials. It is expected to award contracts for the erection of these buildings on Aug. 15.

# Prices Finished Iron and Steel f.o.b. Pittsburgh

Carload Lots

**Plates**  
Sheared, tank quality, base, per lb.....2.50c.

**Structural Material**  
Beams, channels, etc., base, per lb.....2.50c.  
Sheet piling .....2.65c.

**Iron and Steel Bars**  
Soft steel bars, base, per lb.....2.40c.  
Soft steel bars for cold finishing.....\$3 per ton over base  
Reinforcing steel bars, base.....2.40c.  
Refined iron bars, base, per lb.....3.25c.  
Double refined iron bars, base, per lb.....4.85c. to 5.00c.  
Stay bolt iron bars, base, per lb.....8.00c. to 8.50c.

**Hot-Rolled Flats**  
Hoops, ordinary gages and widths, base, per lb.....3.15c.  
Hoops, light gage, under 1 in. wide.....3.30c. to 3.50c.  
Bands, base, per lb.....3.15c.  
Strips, base, per lb.....3.00c. to 3.15c.  
Cotton ties, per bundle of 45 lb.....\$1.62

**Cold-Finished Steels**  
Bars and shafting base, per lb.....3.25c.  
Strips, base, per lb.....5.00c.

**Wire Products**  
Nails, base, per keg.....\$3.00  
Galvanized nails, 1 in. and over.....\$2.25 over base  
Galvanized nails, less than 1 in.....2.50 over base  
Bright plain wire, base, No. 9 gage, per 100 lb.....2.75  
Annealed fence wire, base, per 100 lb.....2.90  
Spring wire, base, per 100 lb.....3.70  
Galvanized wire, No. 9, base, per 100 lb.....3.35  
Galvanized barbed, base, per 100 lb.....3.80  
Galvanized staples, base, per keg.....3.80  
Painted barbed wire, base, per 100 lb.....3.45  
Polished staples, base, per keg.....3.45  
Cement coated nails, base, per count keg.....2.70  
Woven fence, carloads (to jobbers).....67½ per cent off list  
Woven fence, carloads (to retailers).....65 per cent off list

**Bolts and Nuts**  
Machine bolts, small, rolled threads..60 and 10 per cent off list  
Machine bolts, small, cut threads..50, 10 and 10 per cent off list  
Machine bolts, larger and longer..50, 10 and 10 per cent off list  
Carriage bolts, ½ x 6 in.:  
Smaller and shorter, rolled threads  
Cut threads.....50, 10 and 10 per cent off list  
Larger and longer.....50 and 10 per cent off list  
Lag bolts.....60 and 10 per cent off list  
Plow bolts, Nos. 1, 2 and 3 heads.....50 and 10 per cent off list  
Other style heads.....20 per cent extra  
Machine bolts, c.p.c. and t. nuts, ½ x 4 in.  
45 and 10 per cent off list  
Larger and longer sizes.....45 and 10 per cent off list  
Hot pressed square or hex. nuts, blank.....3.75c. off list  
Hot pressed nuts, tapped.....3.75c. off list  
C.p.c. and t. square or hex. nuts, blank.....3.75c. off list  
C.p.c. and t. square or hex. nuts, tapped.....3.75c. off list  
Semi-finished hex. nuts:  
½ in. and smaller, U. S. S.....80 per cent off list  
¾ in. and larger, U. S. S.....75 per cent off list  
Small sizes, S. A. E.....80 and 5 per cent off list  
S. A. E., ½ in. and larger.....75 and 5 per cent off list  
Stove bolts in packages.....75, 10 and 5 per cent off list  
Stove bolts in bulk.....75, 10, 5 and 2½ per cent off list  
Tire bolts.....50, 10 and 10 per cent off list  
Bolt ends with hot pressed nuts..50, 10 and 10 per cent off list  
Turnbuckles, with ends, ½ in. and smaller  
55 and 5 to 50 per cent off list  
Turnbuckles, without ends, ½ in. and smaller  
70 and 10 to 65 and 5 per cent off list  
Washers .....5c. to 5.25c. off list

**Cap and Set Screws**  
Milled square and hex. head cap screws, 65 and 10 per cent off list  
Milled set screws.....65 and 10 per cent off list  
Upset cap screws.....75 per cent off list  
Upset set screws.....75 per cent off list  
Milled studs.....50 per cent off list

**Rivets**  
Large structural and ship rivets, base, per 100 lb.\$3.00 to \$3.25  
Large boiler rivets, base, per 100 lb.....3.10 to 3.35  
Small rivets.....65 and 10 to 65 and 5 off list

**Track Equipment**  
Spikes, ½ in. and larger, base, per 100 lb.....\$3.15  
Spikes, ½ in., ⅞ in. and ¾ in., per 100 lb.....\$3.50 to 3.75  
Spikes, ¾ in.....3.50 to 3.75  
Spikes, boat and barge, base, per 100 lb.....3.50 to 3.75  
Track bolts, ¾ in. and larger, base, per 100 lb.....4.00 to 4.25  
Track bolts, ½ in. and ¾ in., base, per 100 lb.....5.00 to 5.50  
Tie plates, per 100 lb.....2.55 to 2.60  
Angle bars, base, per 100 lb.....2.75

**Freight Rates**  
All freight rates from Pittsburgh on finished iron and steel products, carload lots, per 100 lb.:  
Philadelphia, domestic..\$0.32 Buffalo.....\$0.265  
Philadelphia, export...0.235 Cleveland.....0.215  
Baltimore, domestic...0.31 Cleveland, Youngstown  
Baltimore, export.....0.225 Comb.....0.19  
New York, domestic...0.34 Detroit.....0.29  
New York, export.....0.255 Cincinnati.....0.29  
Boston, domestic.....0.365 Indianapolis.....0.31  
Boston, export.....0.255 Chicago.....0.34  
The minimum carload to most of the foregoing points is 36,000 lb. To Denver the minimum loading is 40,000 lb, while to the Pacific Coast on all iron and steel products, except structural material, the minimum is 80,000 lb. On the latter item the rate applies to a minimum of 50,000 lb., and there is an extra charge of 9c. per 100 lb. on carloads of a minimum of 40,000 lb. On shipments of wrought iron and steel pipe to Kansas City, St. Paul, Omaha and Denver the minimum carload is 46,000 lb. On iron and steel items not noted above the rates vary somewhat and are given in detail in the regular railroad tariffs.  
Rates from Atlantic Coast ports (i.e., New York, Philadelphia and Baltimore) to Pacific Coast ports of call on most steamship lines, via the Panama Canal, are as follows: Pig iron, 35c.; ship plates, 40c.; ingot and muck bars, structural steel, common wire products including cut or wire nails, spikes, and wire hoops, 40c.; sheets and tin plates, 40c.; sheets, No. 12 gage and lighter, 50c.; rods, 40c.; wire rope cable and strands, 45c.; wire fencing, netting and stretcher, 40c.; pipes not over 12 in. in diameter, 55c.; over 12 in. in diameter, 2½c. per in. or fraction thereof additional. All prices per 100 lb. in carload lots, minimum 40,000 lb.

|           |       | Welded Pipe                         |         |       |       |
|-----------|-------|-------------------------------------|---------|-------|-------|
|           |       | Butt Weld                           |         | Iron  |       |
| Inches    | Steel | Galv.                               | Inches  | Black | Galv. |
| 1½        | 45    | 19½                                 | ¼ to ¾  | +11   | +39   |
| 1½ to 2   | 51    | 25½                                 | ¾       | 22    | 3     |
| 2         | 56    | 42½                                 | ¾       | 28    | 11    |
| 2½        | 60    | 48½                                 | 1 to 1½ | 30    | 13    |
| 1 to 3    | 62    | 50½                                 |         |       |       |
|           |       | Lap Weld                            |         |       |       |
| 2         | 55    | 43½                                 | 2       | 23    | 7     |
| 2½ to 6   | 59    | 47½                                 | 2½      | 26    | 11    |
| 7 and 8   | 56    | 43½                                 | 3 to 6  | 28    | 13    |
| 9 and 10  | 54    | 41½                                 | 7 to 12 | 26    | 11    |
| 11 and 12 | 53    | 40½                                 |         |       |       |
|           |       | Butt Weld, extra strong, plain ends |         |       |       |
| ¼         | 41    | 24½                                 | 2 to 3  | 61    | 50½   |
| ¼ to ¾    | 47    | 30½                                 | ¾ to ¾  | +19   | +54   |
| ¾         | 53    | 42½                                 | ¾       | 21    | 7     |
| ¾         | 58    | 47½                                 | ¾       | 28    | 12    |
| 1 to 1½   | 60    | 49½                                 | 1 to 1½ | 30    | 14    |
|           |       | Lap Weld, extra strong, plain ends  |         |       |       |
| 2         | 53    | 42½                                 | 2       | 23    | 9     |
| 2½ to 4   | 57    | 46½                                 | 2½ to 4 | 29    | 15    |
| 4½ to 6   | 56    | 45½                                 | 4½ to 6 | 28    | 14    |
| 7 to 8    | 52    | 39½                                 | 7 to 8  | 21    | 7     |
| 9 and 10  | 46    | 32½                                 | 9 to 12 | 16    | 2     |
| 11 and 12 | 44    | 31½                                 |         |       |       |

To the large jobbing trade the above discounts are increased by one point, with supplementary discount of 5 per cent on black and 1½ points, with a supplementary discount of 5 per cent, on galvanized.

|              |     | Boiler Tubes  |     |
|--------------|-----|---------------|-----|
|              |     | Charcoal Iron |     |
| 2 to 2½ in.  | 27  | 1½ in.        | +18 |
| 2½ to 3 in.  | 37  | 1½ to 1¾ in.  | +8  |
| 3 in.        | 40  | 2 to 2½ in.   | 2   |
| 3½ to 3¾ in. | 42½ | 2½ to 3 in.   | 7   |
| 4 to 13 in.  | 46  | 3½ to 4½ in.  | 9   |

|               |    | Standard Commercial Seamless Boiler Tubes |    |
|---------------|----|---|----|
|               |    | Cold Drawn                                |    |
| 1 in.         | 55 | 3 and 3½ in.                              | 36 |
| 1½ and 1¾ in. | 47 | 3½ and 3¾ in.                             | 37 |
| 1¾ in.        | 31 | 4 in.                                     | 41 |
| 2 and 2½ in.  | 22 | 4½ in. and 5 in.                          | 33 |
| 2½ and 2¾ in. | 32 |   |    |

Less carloads, 4 points less. Add \$8 per net ton for more than four gages heavier than standard. No extras for lengths up to and including 24 ft. Sizes smaller than 1 in. and lighter than standard gage to be sold at mechanical tube list and discount. Intermediate sizes and gages not listed take price of net larger outside diameter and heavier gage.

**Seamless Mechanical Tubing**  
Carbon under 0.30, base.....83 per cent off list  
Carbon 0.30 to 0.40, base.....81 per cent off list  
Plus usual differentials and extras for cutting. Warehouse discounts range higher.

|                        |    | Seamless Locomotive and Superheater Tubes |               |
|------------------------|----|---|---------------|
|                        |    | Cents per Ft.                             | Cents per Ft. |
| 2-in. O.D. 12 gage...  | 15 | 2½-in. O.D. 10 gage..                     | 20            |
| 2-in. O.D. 11 gage.... | 16 | 3-in. O.D. 7 gage....                     | 35            |
| 2-in. O.D. 10 gage.... | 17 | 1½-in. O.D. 9 gage..                      | 15            |
| 2½-in. O.D. 12 gage..  | 17 | 5½-in. O.D. 9 gage..                      | 55            |
| 2½-in. O.D. 11 gage..  | 18 | 5½-in. O.D. 9 gage..                      | 57            |

**Tin Plate**  
Standard cokes, per base box.....\$5.50

|                                  |         | Terne Plate                |         |
|----------------------------------|---------|----------------------------|---------|
|                                  |         | (Per package, 20 x 28 in.) |         |
| 8-lb. coating, 100 lb. base..... | \$11.00 | 20-lb. coating I. C....    | \$14.90 |
| 8-lb. coating I. C.....          | 11.30   | 25-lb. coating I. C....    | 16.20   |
| 12-lb. coating I. C.....         | 12.70   | 30-lb. coating I. C....    | 17.35   |
| 15-lb. coating I. C.....         | 13.95   | 35-lb. coating I. C....    | 18.35   |
|                                  |         | 40-lb. coating I. C....    | 19.35   |

**Sheets**  
**Blue Annealed**  
Nos. 9 and 10 (base), per lb.....3.00c.

**Box Annealed, One Pass Cold Rolled**  
No. 28 (base), per lb.....3.75c. to 3.85c.

**Automobile Sheets**  
Regular auto body sheets, base (22 gage), per lb....5.35c.

**Galvanized**  
No. 23 (base), per lb.....5.00c.

**Long Ternes**  
No. 28 gage (base), 8-lb. coating, per lb.....5.30c.

**Tin-Mill Black Plate**  
No. 28 (base), per lb.....3.85c.

Manufacturers have pamphlets, which can be had upon application, giving price differentials for gage and extras for length, width, shearing, etc.



# Prices of Raw Materials, Semi-Finished and Finished Products

## Ores

| Lake Superior Ores, Delivered Lower Lake Ports  |                  |
|---|------------------|
| Old range Bessemer, 55 per cent iron.....   | \$6.45           |
| Old range non-Bessemer, 51½ per cent iron.....  | 5.70             |
| Mesabi Bessemer, 65 per cent iron.....  | 6.20             |
| Mesabi non-Bessemer, 51½ per cent iron.....   | 5.55             |
| Foreign Ore, per Unit, c.i.f. Philadelphia or Baltimore   |                  |
| Iron ore, low phos., copper free, 55 to 58 per cent iron in dry Spanish or Algerian.....                      | 11½c.            |
| Iron ore, Swedish, average 66 per cent iron... ..   | 10.50c.          |
| Manganese ore, washed, 51 per cent manganese, from the Caucasus, nominal.....                                 | 45c.             |
| Manganese ore, ordinary, 48 per cent manganese, from the Caucasus .....                                       | 42c.             |
| Manganese ore, Brazilian or Indian, nominal .....   | 42c.             |
| Tungsten ore, per unit, in 60 per cent concentrates .....   | \$8.50           |
| Chrome ore, basic, 48 per cent Cr <sub>2</sub> O <sub>3</sub> , crude, per ton, c.i.f. Atlantic seaboard..... | \$18.00 to 23.00 |
| Molybdenum ore, 85 per cent concentrates, per lb. of MoS <sub>3</sub> , New York.....                         | 75c. to 85c.     |

## Ferroalloys

|  |                  |
|--|------------------|
| Ferromanganese, domestic, 80 per cent, furnace, or seaboard, per ton.....                          | \$117.50         |
| Ferromanganese, British, 80 per cent, f.o.b. Atlantic port, duty paid.....                         | 117.50           |
| Spiegeleisen, domestic, 19 to 21 per cent, per ton, furnace .....                                  | \$45.00 to 47.50 |
| Spiegeleisen, domestic, 16 to 19 per cent, furnace, per ton.....                                   | 44.00 to 46.50   |
| Ferrosilicon, 50 per cent, delivered, per gross ton .....  | 82.50            |
| Ferrosilicon, Bessemer, 10 per cent, per ton, furnace .....  | 43.50            |
| Ferrosilicon, Bessemer, 11 per cent, per ton, furnace .....  | 46.80            |
| Ferrosilicon, Bessemer, 12 per cent, per ton, furnace .....  | 50.10            |
| Ferrosilicon, Bessemer, 13 per cent, per ton, furnace .....  | 54.10            |
| Ferrosilicon, Bessemer, 14 per cent, per ton, furnace .....  | 59.10            |
| Silvery iron, 6 per cent, per ton, furnace....   | 32.00            |
| Silvery iron, 7 per cent, per ton, furnace....   | 33.00            |
| Silvery iron, 8 per cent, per ton, furnace....   | 34.50            |
| Silvery iron, 9 per cent, per ton, furnace....   | 36.50            |
| Silvery iron, 10 per cent, per ton, furnace....  | 38.50            |
| Silvery iron, 11 per cent, per ton, furnace....  | 41.80            |
| Silvery iron, 12 per cent, per ton, furnace....  | 45.10            |
| Ferrotungsten, per lb. contained metal.....  | 88c. to 90c.     |
| Ferrochromium, 4 to 6 per cent carbon, 60 to 70 per cent Cr. per lb. contained Cr. delivered ..... | 12c.             |
| Ferrochromium, 6 to 7 per cent carbon, 60 to 70 per cent Cr., per lb.....                          | 11.50c.          |
| Ferrovanadium, per lb. contained vanadium... ..  | \$3.50 to \$4.00 |
| Ferrocobaltititanium, 15 to 18 per cent, per net ton .....   | 200.00           |

## Fluxes and Refractories

|  |                    |
|--|--------------------|
| Fluorspar, 80 per cent and over calcium fluoride, not over 5 per cent silica, per net ton f.o.b. Illinois and Kentucky mines ..... | \$22.00            |
| Fluorspar, 85 per cent and over calcium fluoride, not over 5 per cent silica, per net ton f.o.b. Illinois and Kentucky mines ..... | 23.50              |
| Per 1000 f.o.b. works:   |                    |
| Fire Clay:   |                    |
| Pennsylvania .....   | \$48.00 to \$51.00 |
| Maryland .....   | 50.00 to 53.00     |
| Ohio .....   | 45.00 to 47.00     |
| Kentucky .....   | 45.00 to 47.00     |
| Illinois .....   | 48.00 to 50.00     |
| Missouri .....   | 48.00 to 50.00     |
| Ground fire clay, per net ton.....   | 6.50 to 9.50       |
| Silica Brick:  |                    |
| Pennsylvania .....   | 42.00 to 45.00     |
| Chicago .....  | 52.00              |
| Birmingham .....   | 48.00              |
| Ground silica clay, per net ton.....   | 10.00              |
| Magnesite Brick:   |                    |
| Standard size, per net ton (f.o.b. Baltimore and Chester, Pa.).....  | 65.00              |
| Grain magnesite, per net ton (f.o.b. Baltimore and Chester, Pa.).....  | 40.00              |
| Chrome Brick:  |                    |
| Standard size, per net ton.....  | 50.00              |

## Semi-Finished Steel, f.o.b. Pittsburgh or Youngstown, per gross ton

|  |         |
|--|---------|
| Rolling billets, 4-in. and over.....   | \$42.50 |
| Rolling billets, 2-in. and under.....  | 42.50   |
| Forging billets, ordinary carbons..... | 47.50   |
| Sheet bars, Bessemer.....              | 42.50   |
| Sheet bars, open-hearth.....           | 42.50   |

|  |                          |
|--|--------------------------|
| Slabs .....                                      | \$42.50                  |
| Wire rods, common soft, base, No. 5 to ¼-in..... | 51.00                    |
| Wire rods, common soft, coarser than ¼-in....    | \$2.50 over base         |
| Wire rods, screw stock.....                      | \$5 per ton over base    |
| Wire rods, carbon 0.20 to 0.40.....              | \$3 per ton over base    |
| Wire rods, carbon 0.41 to 0.55.....              | \$5 per ton over base    |
| Wire rods, carbon 0.56 to 0.75.....              | \$7.50 per ton over base |
| Wire rods, carbon over 0.75.....                 | \$10 per ton over base   |
| Wire rods, acid .....                            | \$15 per ton over base   |
| Skelp, grooved, per lb.....                      | 2.40                     |
| Skelp, sheared, per lb.....                      | 2.40                     |
| Skelp, universal, per lb.....                    | 2.40                     |

## Finished Iron and Steel, f.o.b. Mill

|  |                  |
|--|------------------|
| Rails, heavy, per gross ton.....                       | \$43.00          |
| Rails, light, new steel, base, per lb.....             | 2.25c.           |
| Rails, light, rerolled, base, per lb.....              | 2.10c. to 2.15c. |
| Spikes, ½-in. and larger, base, per 100 lb.....        | \$3.15           |
| Spikes, ½-in., ⅝-in. and ¾-in., base per 100 lb. ....  | \$3.25 to 3.75   |
| Spikes, ¾-in., base, per 100 lb.....                   | 3.25 to 3.75     |
| Spikes, boat and barge, base, per 100 lb.....          | 3.50 to 3.75     |
| Track bolts, ¾-in. and smaller, base, per 100 lb. .... | 4.15 to 4.50     |
| Track bolts, ¾-in. and larger, base, per 100 lb..      | 4.75 to 5.50     |
| Tie plates, per 100 lb.....                            | 2.55 to 2.60     |
| Angle bars, per 100 lb.....                            | 2.75             |
| Bars, common iron, base, per lb., Chicago mill. ....   | 2.50c.           |
| Bars, common iron, Philadelphia mill.....              | 2.35c.           |
| Bars, common iron, Pittsburgh mill.....                | 2.40c.           |
| Bars, rails, steel reinforcing, base, per lb.....      | 2.15c. to 2.25c. |
| Ground shafting, base, per lb.....                     | 3.65c.           |
| Cut nails, base, per keg.....                          | \$3.25           |

## S. A. E. Semi-finished Castellated Nuts and U. S. S. Semi-finished Slotted Nuts

(To jobbers and consumers in large quantities f.o.b. Pittsburgh)

|             | Per 1000 |          |
|-------------|----------|----------|
|             | S. A. E. | U. S. S. |
| ¼-in. ....  | \$4.80   | \$4.80   |
| ⅜-in. ....  | 5.50     | 6.00     |
| ½-in. ....  | 6.50     | 7.00     |
| ⅝-in. ....  | 9.00     | 9.50     |
| ¾-in. ....  | 11.00    | 11.50    |
| ⅞-in. ....  | 15.00    | 15.00    |
| 1-in. ....  | 19.50    | 20.00    |
| 1¼-in. .... | 28.50    | 28.50    |
| 1½-in. .... | 37.00    | 37.50    |
| 1¾-in. .... | 58.50    | 60.50    |
| 2-in. ....  | 88.00    | 97.00    |
| 2¼-in. .... | 132.00   | 132.00   |
| 2½-in. .... | 176.00   | 176.00   |
| 3-in. ....  | 220.00   | 220.00   |

Larger sizes—Prices on application

## Alloy Steel

| S.A.E. Series Numbers  | Bars 100 lb. |
|--|--------------|
| 2100 (¾% Nickel, 10 to 20 per cent Carbon).....                                | \$3.50       |
| 2300 (3¼% Nickel) .....  | 5.50         |
| 2500 (5% Nickel) .....   | 8.00         |
| 3100 (Nickel Chromium).....  | 4.50         |
| 3200 (Nickel Chromium) .....   | 6.25         |
| 3300 (Nickel Chromium) .....   | 8.25         |
| 3400 (Nickel Chromium) .....   | 7.25         |
| 5100 (Chromium Steel) .....  | 4.00         |
| 5200 (Chromium Steel).....   | 8.25         |
| 6100 (Chromium Vanadium bars).....   | 5.25         |
| 6100 (Chromium Vanadium spring steel).....                                     | 5.00         |
| 9250 (Silico Manganese spring steel).....                                      | 4.00         |
| Nickel Chrome Vanadium (0.60 Nickel, 0.50 Chromium, 0.15 Vanadium) .....       | 5.50         |
| Chromium Molybdenum bars (0.80—1.10 Chromium, 0.25—0.40 Molybdenum) .....      | 4.75         |
| Chromium Molybdenum bars (0.50—0.70 Chromium, 0.15—0.25 Molybdenum) .....      | 4.50         |
| Chromium Molybdenum spring steel (1—1.25 Chromium, 0.30—0.50 Molybdenum) ..... | 4.50         |

Above prices are for hot-rolled alloy steel bars, forging quality, per 100 lb. f.o.b. Pittsburgh. Billets 4 x 4 in. and larger are \$10 per gross ton less than net ton price for bars of same analyses. On smaller than 4 x 4-in. billets down to and including 2½-in. sq. there is a size extra of \$10 per gross ton; on billets smaller than 2½-in. sq. the net ton bar price applies.

## NON-FERROUS METALS

### The Week's Prices

Cents per Pound for Early Delivery

| Aug.   | Copper, New York |                |           | Straits Tin |           | Lead     |           | Zinc     |           |
|--------|------------------|----------------|-----------|-------------|-----------|----------|-----------|----------|-----------|
|        | Lake             | Electro-lytic* | New York  | New York    | St. Louis | New York | St. Louis | New York | St. Louis |
| 1..... | 14.87 1/2        | 14.37 1/2      | 38.12 1/2 | 6.75        | 6.62 1/2  | 6.60     | 6.25      |          |           |
| 2..... | 14.75            | 14.25          | 38.12 1/2 | 6.75        | 6.62 1/2  | 6.55     | 6.20      |          |           |
| 3..... | 14.75            | 14.12 1/2      | 38.00     | 6.75        | 6.62 1/2  | 6.52 1/2 | 6.17 1/2  |          |           |
| 4..... | 14.75            | 14.12 1/2      | ....      | 6.75        | 6.62 1/2  | 6.52 1/2 | 6.17 1/2  |          |           |
| 5..... | 14.75            | 14.12 1/2      | 38.00     | 6.75        | 6.62 1/2  | 6.50     | 6.15      |          |           |
| 6..... | 14.75            | 14.12 1/2      | 38.37 1/2 | 6.75        | 6.62 1/2  | 6.50     | 6.15      |          |           |
| 7..... | 14.75            | 14.12 1/2      | 38.37 1/2 | 6.75        | 6.62 1/2  | 6.50     | 6.15      |          |           |

\*Refinery quotation; delivered price 1/4 c. higher.

### New York

NEW YORK, Aug. 7.

The markets generally are sluggish and quotations in most of them are lower. Buying of copper is moderate at declining prices. The tin market is inactive and prices are lower. The lead market has turned dull and slightly easier. There is no life to the zinc market and quotations have declined.

**Copper.**—There has been some moderately good buying of electrolytic copper the past week and there are some substantial inquiries before the market, but, as a whole, conditions may be considered no better than might be expected this time of the year. It is reported that late last week 5,000,000 lb. of electrolytic copper was bought but the actual price realized was not made public. It is generally believed, however, that the metal changed hands at 14.37 1/2 c., delivered. Metal has been available at that price for some days and there is no question that further orders could be placed at this level. There is an inquiry before the market for 3,000,000 lb. and another unconfirmed report of one of 4,000,000 lb. It is believed that there is considerable business yet to be placed by consumers for September consumption. The export market is only moderately active. Lake copper is quoted around 14.75c., delivered.

**Tin.**—The Straits tin market has been inactive on all days except last Thursday, Aug. 3, when about 250 tons changed hands at 37.75c. to 38c., mostly futures. One lot was reported sold at 38.25c. Early in the week dealers seemed eager to make sales, which was interpreted as an effort to sell short, but on Saturday and yesterday there were indications of bidding by dealers to strengthen the market, but very little resulted from either of these movements. On Friday, owing to the death of the President, business was almost completely suspended. Yesterday the markets in London were closed owing to a bank holiday. The quotation of spot Straits tin today was 38.37 1/2 c., New York, and London quotations were about 7 1/2 s. per ton above those of yesterday at £181 15s. for spot standard, £182 15s. for future standard and £185 5s. for spot Straits. Arrivals thus far this month have been 1425 tons, with 6612 tons reported afloat. Deliveries into consumption in July were 5305 tons, with 2037 tons in stock and landing on July 31.

**Lead.**—This market has turned quiet and the pronounced strength of a week or so ago has somewhat diminished. Buying by consumers has been very light and there has been very little bidding by dealers. It is believed by some that the recent advance has come to a halt and that a decline may not be unexpected. The price of the leading interest continues unchanged at 6.50c., New York, with the St. Louis price a little lower at 6.60c. to 6.65c.

**Zinc.**—There is almost no consuming demand for prime Western, and this, together with lower prices in London, has resulted in a softening of the market here. For August or 30-day delivery prime Western is quoted at 6.15c., St. Louis, or 6.50c., New York, which is largely nominal, with the September price 6.20c., New York, and the October, 6.25c.

**Nickel.**—Shot and ingot nickel are quoted unchanged

at 29c. to 32c. per lb., with electrolytic nickel held at 32c. by the leading producers. Quotations for shot and ingot nickel in the outside spot market are 29c. to 32c. per lb.

**Antimony.**—One seller reports the sale of 600 tons of Chinese antimony for delivery through the rest of the year. The market is fairly active, due partly to the fact that large quantities of antimony are being used by battery makers. Wholesale lots for early delivery are quoted at 7.60c. to 7.70c., New York, duty paid.

**Aluminum.**—Virgin metal, 98 to 99 per cent pure, is quoted by importers in wholesale lots at 26.50c. to 27c. per lb., New York, duty paid, by such dealers who can obtain it from their principals. The leading domestic producer makes public no quotations.

**Old Metals.**—The market is weak and business is very quiet. Dealers' selling prices are as follows:

|   | Cents Per Lb. |
|---|---------------|
| Copper, heavy and crucible .....              | 14.00         |
| Copper, heavy and wire .....                  | 13.00         |
| Copper, light and bottoms .....               | 11.00         |
| Heavy machine composition .....               | 11.00         |
| Brass, heavy .....                            | 8.00          |
| Brass, light .....                            | 6.75          |
| No. 1 red brass or composition turnings ..... | 9.00          |
| No. 1 yellow rod brass turnings .....         | 7.50          |
| Lead, heavy .....                             | 6.00          |
| Lead, tea .....                               | 4.75          |
| Zinc .....                                    | 4.75          |

### Chicago

CHICAGO, Aug. 7.—Tin, lead and zinc have declined while antimony has advanced. There has been no activity in the market outside of hand to mouth buying. Among the old metals lead pipe has declined. We quote in carload lots, Lake copper, 15.25c.; tin, 40c.; lead, 6.65c.; spelter, 6.20c.; antimony, 9c., in less than carload lots. On old metals we quote copper wire, crucible shapes and copper clips, 11.50c.; copper bottoms, 10c.; red brass, 8.50c.; yellow brass, 6c.; lead pipe, 4.75c.; zinc, 4c.; pewter, No. 1, 20c.; tin foil, 22.50c.; block tin, 27.50c.; all buying prices for less than carload lots.

### June Production of Malleable Castings

WASHINGTON, Aug. 3.—The Department of Commerce announces statistics on the production of malleable castings manufactured for sale during June, 1923, as shown by reports received by the Bureau of Census. The figures for May are revised to include reports received since the preliminary bulletin for that month was issued. The returns include only those castings manufactured for sale as such and do not include those used in the plant or finished and sold as other products.

The returns for June include 96 establishments and show that during the month these plants were operated 67.3 per cent of their total capacity. The revised figures for May include the production of 90 establishments which were operated 71 per cent of their total capacity during the month.

| Month    | No. of Plants Reporting | Total Production, Tons | Total Shipments, Tons | Orders Booked, Tons | Monthly Capacity of Plants, Tons |
|----------|-------------------------|------------------------|-----------------------|---------------------|----------------------------------|
| June.... | 96                      | 61,949                 | 61,441                | 38,536              | 92,004                           |
| May....  | 90                      | 64,726                 | 62,806                | 52,898              | 91,174                           |

Two foundries and equipment situated on Robeson Street, Reading, Pa., will be offered at public sale on Aug. 18, as the estate of the late Edwin A. Moore. The first unit covers one acre and includes foundry, core building, carpenter and machine building, two sand blast buildings and cupola, engines, boilers, machinery and appliances. The second unit is located at Spring City, Chester County, Pa., and covers three acres. Improvements consist of foundry, machine, power and other buildings, together with cupola and various equipment constituting a well-established foundry business. Both foundries are being operated by the executors and will be sold as going concerns. Information will be given by the Reading Trust Co., executors, Fifth and Court Streets, Reading.



## PERSONAL

William C. Reilly, the new vice-president of the Youngstown Sheet & Tube Co., Youngstown, has been general superintendent of the company since 1901. He began his career in the industry as a boy with Brown, Bonnell & Co., at Youngstown, subsequently serving the Mahoning Valley Iron Co. He became identified with the Republic Iron & Steel Co. in 1899, when that company was formed, serving as assistant to James A. Campbell, who was appointed superintendent of the Republic company in the Youngstown district. Mr. Campbell, now the Sheet & Tube company president, and Mr. Reilly were associated together in formation in 1900 of the Youngstown Iron, Sheet & Tube Co., subsequently the Youngstown Sheet & Tube Co.



WILLIAM C. REILLY

Charles A. Tice and George C. Tinsley of Youngstown have formed the Tice-Tinsley Steel Co., organized for the buying, selling and warehousing of iron and steel products, and succeeding the Tice Steel Co. Headquarters are at 402 Terminal Building, Youngstown. Mr. Tice was formerly in the sales department of the Brier Hill Steel Co., Youngstown, and previously with the Berger Mfg. Co., Canton. Mr. Tinsley has been with the David J. Joseph Co. at Youngstown and was formerly connected with the Commercial Shearing & Stamping Co. Plans are being developed for the establishment of a warehouse.

Frank C. Farrell, who has been assistant superintendent of blast furnaces and the steel department of the Youngstown Sheet & Tube Co., Youngstown, has been advanced to works superintendent at Youngstown. Emil F. Vogel, who has been superintendent of the coke works, has been promoted to assistant works superintendent. Both will report directly to E. T. McCleary, recently appointed manager of the company's Youngstown district plants.

Joseph G. Butler, Jr., veteran iron and steel maker of the Mahoning Valley, has been sojourning at Atlantic City. Mr. Butler is accompanied by a number of nurses, owing to his failure to recover from injuries sustained several years ago when he was struck by a motor vehicle.

William Eberline, manager of the Chicago store of the Greenfield Tap & Die Corporation, Greenfield, Mass., has resigned to become assistant sales manager of the Lakeside Forge Co., Erie, Pa.

E. E. Hart, for the past two years on the sales force of the Stocker-Rumely-Wachs Co., machinery dealer, Chicago, has resigned and opened an office in Machinery Hall, Washington Boulevard and Clinton Street, Chicago.

George C. Schade has resigned as purchasing agent of the Fort Pitt Bridge Works, Canonsburg, Pa., effective Aug. 1.

Stanley H. Smith, who represented the Pennsylvania Steel Co. and the Bethlehem Steel Co. in Cleveland and Chicago, and since leaving the latter company has been acting as manufacturers' agent at 422 Frankfort Avenue, Cleveland, where he represents the Wyoming Shovel Works, the National Lock Washer Co., Harrisburg Pipe & Pipe Bending Co. and the Stevens Metal Products Co., has recently been appointed district representative for Ohio for the Titusville Forge Co.

Richard F. Grant of the M. A. Hanna Co., and president of the Cleveland Chamber of Commerce, has been elected director of the sixth district of the United States Chamber of Commerce, comprising Ohio, Michigan, Indiana, Illinois and Wisconsin.

George E. Merryweather, president Motch & Merryweather Machinery Co., has been appointed a member of the board of 12 trustees, which constitutes the executive board of the Cleveland Engineering Society, to take the place of the late H. E. Hackenberg.

Andrew M. Kennedy has been appointed general manager of the Sharpsville Furnace Co., Sharpsville, Pa. He was formerly superintendent of the open hearth department, Trumbull Steel Co., Warren, Ohio, and before that was with the Sharon Steel Hoop Co., Sharon, Pa. He is a graduate of Lehigh University, Class of 1912. R. W. Coats has resigned as superintendent of the blast furnace, effective Sept. 1. His successor is J. W. Halloran, formerly with the blast furnace department of the Republic Iron & Steel Co., Youngstown, Ohio.

W. C. Hamilton has resigned as works manager of the Duquesne Steel Foundry Co., Coraopolis, Pa., to go back with the American Steel Foundries. He becomes chief metallurgist of the latter and will make his headquarters in St. Louis. William Troutman succeeds Mr. Hamilton with the title of general superintendent.

George S. Davies, formerly in the sales department of the Dover Fire Brick Co., Cleveland, has been appointed district sales manager for the Ashland Fire Brick Co., Ashland, Ky., with offices at 1252 East Fifty-fifth Street, Cleveland.

William E. Clark has become connected with the Calorizing Co., Pittsburgh, and will be in charge of Michigan and northern Ohio territory, with offices in Detroit. He was born in Chicago 37 years ago and was graduated from Crane Technical School, Armour Institute of Technology and the United States School for Engineer Officers, Fort Leavenworth, Kan. He served as captain of engineers in the United States Army for two years, being in command of engineer troops in France. During the war he built and had charge of the operation of a heavy forge shop and foundry for the engineers at Nevers, France. Mr. Clark's business experience includes his connection with the engineering department of the American Steel Foundries, Chicago, the sales department of the Babcock & Wilcox Boiler Co., Chicago, as assistant superintendent of the American Foundry & Machinery Co., Chicago, and mechanical engineer for several other companies. He is a member of the American Society of Mechanical Engineers and the American Society for Steel Testing.



WILLIAM E. CLARK

Christian Walter, for two years a director and vice-president of the U. S. Tractor & Machinery Co., Menasha, Wis., which has been reorganized as the Wisconsin Automotive Corporation, has been elected president and will henceforth devote his entire time to the enterprise. G. D. Harris remains vice-president and general manager; Dr. A. B. Jensen, treasurer; Joseph G. Sailer, secretary, and A. F. Reinecke, assistant secretary and treasurer.

Christopher J. Meyer, president Evinrude Motor Co., Milwaukee, expects to sail Sept. 6 from New York to visit the Evinrude factory in Munich, Germany, and for general investigation of export possibilities throughout Europe. His tour embraces visits to France, Spain, Belgium, Denmark and the British Isles.

William Hodges, superintendent of production Standard Steel & Bearing Corporation, Plainsville, Conn., has resigned. He proposes to return to Illinois and engage in business but has not completed plans.

R. W. Chandler, manager industrial truck division Yale & Towne Mfg. Co., Stamford, Conn., is to visit manufacturing centers in England, France, Belgium, Sweden, Denmark, Norway and Holland within the near future.

Walter H. Underwood has been appointed general manager of sales of the St. Louis Coke & Iron Co., St. Louis. He went with the St. Louis company about three years ago to take charge of sales and was made sales manager about two years ago. J. C. Gore, as has been announced previously, was made general sales agent at Chicago.

Jerome Benjamin has been made vice-president of the Harry Benjamin Equipment Co., St. Louis, to succeed Armand Alexandre, resigned. Fred S. Fuld has been elected treasurer to fill the vacancy caused by the promotion of Mr. Benjamin.

W. E. Dunn, Jr., secretary Southern Metal Trades Association with headquarters at Atlanta, Ga., will sail on Aug. 18 on the Leviathan from New York to attend the International Congress of Foundrymen, which convenes in Paris commencing Sept. 2. Mr. Dunn goes as representative of the metal trades industry of the entire South, the trip being given as a compliment in appreciation for his services.

J. H. Crossley of the Metropolitan-Vickers Electrical Co., Manchester, England, who has been in the United States studying industrial electric heating developments, recently sailed on the return journey.

Harry J. Bell, manager safety council, Chicago Association of Commerce, has resigned to accept the position of manager of the safety division of the Milwaukee Association of Commerce, succeeding Charles M. Anderson, who on Aug. 15 will assume charge of the division at Memphis, Tenn.

## OBITUARY

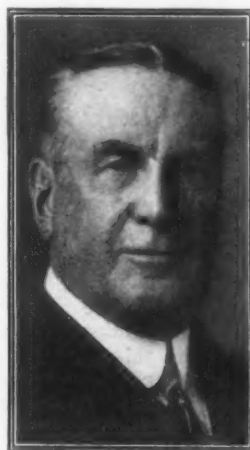
WILLIS F. MCCOOK, president, as well as one of the organizers of the Pittsburgh Steel Co., Pittsburgh, and a prominent figure in a legal way for many years in the iron and steel and affiliated industries in Pittsburgh, died at the West Penn Hospital, Pittsburgh, Aug. 5. He was born in Lisbon, Ohio, Jan. 19, 1851. His parents moved to Pittsburgh during his infancy and he had been a resident of that city all his life. He was graduated from Yale University with the class of 1873, and completed the legal course at Columbia University two years later and was admitted to practice in Pennsylvania that year. During his career as a lawyer Mr. McCook was connected with the organization of many of western Pennsylvania's largest industrial enterprises in the capacity of counsel. Early in his career he was the legal representative of Henry C. Frick and T. M. Carnegie. He helped to organize the Frick Coke Co. at the time the Carnegie Steel entered into business relations with Mr. Frick and his associates. Mr. McCook was counsel for Mr. Frick in the latter's celebrated controversy with Andrew Carnegie. He was an active figure in the organization of the Republic Iron & Steel Co., and the American Steel



WILLIS F. MCCOOK

& Wire Co. He was identified with the following corporations: Pittsburgh Steel Products Co., vice-president and director; Mesaba Cliffs Iron Mining Co., vice-president and director; American-Austrian Magnesite Corporation, vice-president and director; Concordia Electric Co., vice-president and director; Workingman's Savings Bank & Trust Co., vice-president and director; Duquesne National Bank, director; Equitable Life Assurance Society of the United States, director; American Iron and Steel Institute, director; Mercy Hospital, Pittsburgh, trustee; Western Pennsylvania School for the Blind, member of the board of managers. He was a member of the Duquesne, Union, University, Oakmont Country, Pittsburgh Golf, Pittsburgh Athletic Association, Yale Club of New York and Catholic Club of New York. He is survived by six daughters and three sons.

HARVEY H. BROWN, long prominently identified with the iron ore and pig iron and lake vessel industry in Cleveland, died at his home in that city Aug. 2. He



HARVEY H. BROWN

was active in business until about a year ago when his health failed. His age was 75 years. He was the senior partner in the iron ore firm of Harvey H. Brown & Co., which he, with his father, Fayette Brown, organized in 1879. Associated with him in that firm was his son, Fayette Brown. He was also president of the Stewart Furnace Co., formerly the Stewart Iron Co., Ltd., which operates a blast furnace at Sharon, Pa., he and his father having purchased the Stewart plant about 1888. He was treasurer of the Stewart company until the death

of his father in 1910, when he succeeded the latter to the presidency. Mr. Brown was also long affiliated with the Brown Hoisting Machinery Co., Cleveland, being at one time treasurer, then president, and for the past four years chairman of the board of directors. He was also a prominent figure in financial circles in Cleveland, being a director of the Union Trust Co. and of the Guardian Savings & Trust Co. of that city. He was a member of a family four generations of which have been active in the industrial and financial life of Cleveland. He was a man of strict integrity and of kind disposition and was held in the highest esteem by all of his associates. His father, Fayette Brown, founded the Brown Hoisting Machinery Co., and his brother, Alexander E. Brown, was the president of that company at the time of his death in 1911. The latter's son, Alexander C. Brown, is at present president of the Brown Hoisting Machinery Co. Besides his son, Fayette Brown, Mr. Brown is survived by three daughters and another son, Harvey H. Brown, Jr., who is connected with the Brown Hoisting Machinery Co.

WILLIAM R. MILLER, president W. R. Miller Co., Pittsburgh, furnace and contracting engineer, died at his home in that city on July 26. Mr. Miller was born in Sharpsburg, Pa., in 1850 and had made his home in Pittsburgh practically all of his life. He had a wide acquaintance in the iron and steel industry because of his engineering activities and as the originator of several improvements in furnace installation. He developed the Miller gas producer. For a great many years he was head of the Forter & Miller Engineering Co., from which developed the W. R. Miller Co.

EDWARD M. WOODWARD, president and treasurer of the Woodward & Powell Planer Co., Worcester, Mass., and an ex-president of the National Machine Tool Builders' Association, died at his home, Aug. 2, aged 76 years. He was born in Marlboro, N. H., and learned the machinists' trade in the woodworking shop



of his uncle in that village. His first employment as a journeyman was with Lathe & Morse, Worcester, manufacturers of lathes. In 1870 he became mechanical expert at the southern headquarters of the Weed Sewing Machine Co. at Baltimore, and 10 years later went with E. P. Bullard, founder of the Bullard Machine Tool Co., Bridgeport, Conn., as salesman in the New York office. This connection continued for seven years, in the course of which Mr. Woodward was made a partner. In 1887 he organized the business of the Powell Planer Co., with A. M. Powell, to manufacture the Powell planer, and later, with incorporation, the name was changed to the Woodward & Powell Planer Co. He was a founder and the third president of the National Machine Tool Builders' Association, and had been president of the Worcester Branch, National Metal Trades' Association, president of the Worcester Chamber of Commerce, and president of the Worcester County Mechanics' Association. For many years he took a prominent part in the civic affairs of Worcester, having been president of the common council and of the board of alderman, and chairman of the overseers of the poor. He had been prominent as a mason since young manhood and had received his thirty-second degree. He leaves one son, Edward M. Woodward, Jr., vice-president Woodward & Powell Co.

HORACE VAUGHN WINCHELL, well known as a geologist of the Lake Superior region and iron ore authority, died on July 27 in Los Angeles, Cal., where he had been living for some time. He was born at Galesburg, Mich., in 1865 and graduated from the University of Michigan in 1889. During the two years following he was assistant State geologist of Minnesota. After spending two years in charge of explorations with the Minnesota Iron Co., he engaged in general practice as economic geologist and mining engineer. For several years his services were given to the Anaconda Copper Mining Co. and the Amalgamated Copper Co. In 1906 he was appointed chief geologist for the Great Northern Railroad. Mr. Winchell was an active figure in the promotion of the mining industry and served as president of the American Institute of Mining and Metallurgical Engineers in 1919. He was a member of the Geological Society of America, the National Geological Society, the Lake Superior Mining Institute, the Federal Institute of Mining Engineers, and the Institute of Mining and Metallurgy, an English organization. He was co-author of "The Iron Ores of Minnesota," published in 1891, and was the author of many valuable papers on the geology of ore deposits. He had much to do with the development of the Mesabi iron range and his prophecies of its extent and value, that were received with skepticism by the iron ore trade in the early eighteen-nineties, were more than verified. The funeral was held at Minneapolis, Minn., on Thursday, Aug. 2. The list of honorary pall-bearers included: Ex-President W. W. Folwell and George E. Vincent, Prof. H. F. Nachtrieb, Prof. F. L. Washburne and Dean W. R. Appleby, all of Minnesota University; President Angell of Yale; and C. J. Rockwood, W. F. Webster, N. M. Cross, Thomas S. R. Roberts, Harlow Gale, C. S. Langdon, Warren Upham, John S. Pillsbury, E. C. Gale, C. K. Leith, Herbert Hoover, John D. Ryan, L. W. Hill, Sidney Eastman, J. E. Spurr, F. F. Sharpless, John Blair, Dwight E. Woodbridge, Reno H. Sales and John P. Gray.

WALTER P. FEDDER, manager of the order department at New York of the United States Steel Pro-

ducts Co. from the date of its organization, who died on June 22, started in the steel business when he was barely 20 years of age, entering the employ of the Cleveland Rolling Mills in 1895. His birthplace was Pittsburgh.

MAJOR WILLIAM TOZER, director Steel, Peech & Tozer, Ltd., Rotherham, England, and of the United Steel Companies, Ltd., which controls Steel, Peech & Tozer, Workington Iron & Steel Co., Samuel Fox & Co., Rother Vale Collieries, Frodingham Iron & Steel Co. and Appleby Iron Co., died Aug. 2. He had been a member of the Iron and Steel Institute since 1883.

ALOYSIUS J. SWEENEY, assistant to the president McKinney Steel Co., Cleveland, died Aug. 3, after a long illness, aged 46 years. Mr. Sweeney entered the employ of the company 20 years ago as a stenographer and had been in charge of its transportation department for over 10 years.

CHARLES M. MILLER, founder and treasurer Superior Foundry Co., Cleveland, died Aug. 3, after a four months' illness, aged 69 years. He organized the Superior Foundry Co. about 30 years ago. A son, Lester I. Miller, is vice-president of the foundry company.

CHARLES S. HURD, who has been identified for a number of years with the proposal for the building of an iron and steel plant in the New York district, died suddenly in New York, July 31, aged 74 years. Mr. Hurd some years ago conducted the negotiations which resulted in the sale of the Benson iron mine in Northern New York by the Benson heirs to the company which later sold it to the Eastern Steel Co. He was a member of the Bankers' Club and an associate member of the American Iron and Steel Institute.

DELMONT J. KENNEDY, president Bulger Block Coal Co., Pittsburgh, died Aug. 5, in Poland Springs, Me. Mr. Kennedy was a life-long resident of Pittsburgh. He was also president of the D. J. Kennedy Co., the Superior Mining Co., the Darlington Brick & Mining Co., and a director of the City Deposit Bank.

JOSEPH LUTHER WILLIAMS, one of the founders of the Transue & Williams Steel Forging Corporation, Alliance, Ohio, died at his summer home at Petoskey, Mich., July 26. He had recently resided in Cleveland. In 1894, he, with his brother, Silas J. Williams, and Frank and Oliver Transue, formed the Transue & Williams Drop Forge Co., which later was reorganized under its present name. He was secretary and treasurer of that company for a number of years, until poor health compelled him to give up active business, but he retained his interest in the company until death.

## Lake Ore Movement in July

Lake Superior iron ore shipments from the upper lake ports in July were 10,411,248 gross tons, or 1,468,912 tons in excess of those for July, 1922, or an increase of 16.43 per cent. The total of this season's shipments to Aug. 1 was 26,596,731 tons, which compares with 17,293,513 tons to Aug. 1, 1922. The shipments by ports and for the season in 1922 and 1923 are as follows:

|                    | July,<br>1922 | July,<br>1923 | —To Aug. 1— |            |
|--------------------|---------------|---------------|-------------|------------|
|                    |               |               | 1922        | 1923       |
| * Escanaba .....   | 799,536       | 1,123,048     | 1,604,130   | 3,119,695  |
| Marquette .....    | 454,221       | 534,024       | 848,765     | 1,335,973  |
| Ashland .....      | 1,379,608     | 1,184,462     | 2,579,056   | 2,067,616  |
| Superior .....     | 2,010,368     | 3,013,851     | 4,364,963   | 7,648,581  |
| Duluth .....       | 2,872,882     | 3,450,915     | 5,126,745   | 8,324,974  |
| Two Harbors.....   | 1,425,721     | 1,104,948     | 2,769,854   | 2,099,892  |
| Totals .....       | 8,942,336     | 10,411,248    | 17,293,513  | 26,596,731 |
| Increase, 1923.... |               | 1,468,912     |             | 9,303,731  |

The increase to Aug. 1, this year, in the season shipments was 9,303,218 tons, or 53.80 per cent as compared with last year. Duluth contributed 31.30 per cent of the total against 29.64 per cent a year ago. Escanaba and Ashland made substantial gains this year. Great Northern's percentage this year was 25.54 per cent of the total against 22.43 per cent last year.



H. V. WINCHELL

## NEW TRADE PUBLICATIONS

**Feed Water Treatment.**—Andrews-Bradshaw Co., Pittsburgh. Bulletin entitled, "Clean Steam From Your Boilers" containing information on the effects of wet and dirty steam from boilers and the limitations of feed water treatment. The publication is intended for the power plant executive.

**Gas Burning System.**—American Heat Economy Bureau, 826 Wabash Building, Pittsburgh. Small portfolio of drawings showing the application of the Selas one-valve control system for the industrial application of gas for the steel industry. The apparatus is manufactured by the Selas Co., Philadelphia, but the American Heat Economy Bureau has been appointed agent for the United States in connection with the steel industry. K. Huessener is manager of the American bureau. The drawings include an application to sheet mill furnaces.

**Pipe Threading Machines.**—Curtis & Curtis Co., Bridgeport, Conn. Booklet devoted to new Forbes pipe threading and cutting machines, which are semi-automatic in operation. An automatic die release throws the dies automatically out of the thread when the desired length has been cut. An automatic oiling system delivers cutting-oil at points in advance of each chaser.

**Wireless Telephony.**—Mangus Electric Co., Inc., Greenwich and Desbrosses Streets, New York. Radio catalog and reference book of 40 pages, containing information concerning radio products.

**Belting.**—The Chicago Belting Co., 113-25 North Green Street, Chicago. Four-page folder, 6 x 8 in., tells the story of how pre-tested belting is made and sketches in brief the development of the three-ply White Strip brand.

**Pumping Machinery.**—The Weinman Pump Mfg. Co., 270-80 Spruce Street, Columbus, Ohio. Booklet of 25 pages, 7 x 10 in., comprised of excerpts from bulletins issued since 1919 displaying by word and picture various types of steam and power pumping machinery. Sectional views and repair lists are given. Specifications for the several designs also appear, together with suggestions for architects.

**Newport Rotary Oil Burner.**—Hydro-Carbon Burner Mfg. Co., Newport, R. I. Catalog of 16 pages and cover, illustrating and briefly describing an oil burner designed for industrial use. It is said to burn efficiently all grades of fuel oil, including Mexican oils as heavy as 11 deg. Baumé. It is used for high and low pressure boilers and hot water heating systems.

**Solve the Burning Question with Oil.**—Advance Oil Burner Co., 807 East Fifteenth Street, Kansas City, Mo. A catalog of 16 pages and cover devoted to oil burners for industrial and domestic use, including steam atomizing burners, air atomizing burners, oil pumping outfits, etc.

**Tool and Cutter Grinding.**—Norton Co., Worcester. A tool grinding handbook including a catalog of Norton universal tool and cutter grinding machines. Size 5 x 7 in., 117 pages. Following sections devoted to a description of the company's universal machine, the selection of wheels, and data as to general grinding procedure, there is a section of more than 51 pages devoted to the solution of problems in tool and cutter grinding. The set-up is in most cases illustrated. The catalog of tool grinders is confined to illustrations and specifications of the various units. Wheels furnished with the various machines are shown, as well as the construction and method of adjusting spindles. The book is indexed.

**Watchmakers' Tools.**—Kendrick & Davis Co., Lebanon, N. H. Describes and illustrates the company's line of tools, including screw drivers of various types, sleeve wrenches, pin vises, bench keys, ring mandrels, hammers, staking blocks, staking tools and other equipment. Size 6 x 9, 83 pages.

**Flexible Couplings.**—Charles Bond Co., 617 Arch Street, Philadelphia. Booklet F, size 3½ x 6½ in., 12 pages. Devoted to the features and uses of Grundy patent flexible insulated coupling, sizes and dimensions being given. The Mather patent flexible coupling for fractional horsepower loads is also described, and letters regarding the merits of the couplings are included.

**Material Handling Equipment.**—Herbert Morris, Incorporated, Buffalo. Book 5041, 32 pages, 6 x 9 in. The features of the company's triple-gear chain blocks are described and capacities given. The traveling triple-gear block, blocks with hand-wheel extended, twin lift hoists and the Morris platform hoist are also shown. The

worm gear block is illustrated and described and also trolleys of the push and geared types and an electric rope hoist. The illustrations include views of actual installations.

**Grinding Wheels.**—L. Best Co., 28 West Broadway, New York. Supplementary catalog of more than 80 pages. The manufacture of Sterling grinding wheels is briefly outlined and list prices and rules for calculating list prices of straight, cup, cylinder and tapered vitrified and silicate wheels are given, the same data being given also for shellac and rubber wheels. A large part of the catalog is devoted to list prices of special shapes used on various makes and types of grinding machines. Tables of information are included.

**Fuel Oil Equipment.**—Combustion Engineering Corporation, 43 Broad Street, New York. An attractive booklet designated as the QC-1, devoted to the construction and use of Quinn fuel-oil burning equipment. Data relative to the properties, specifications, advantages and supply of fuel oil are given. The Quinn oil burner is described in detail and the operating and equipment cost of oil vs. coal is taken up. A section on important considerations in installing an oil burning system treats of oil storage, pumping, burning. The design of furnaces is outlined and a section is devoted to an explanation of the combustion of fuel oil. Size 8½ x 11 in., 31 pages.

**Grinding Wheels.**—Norton Co., Worcester. Booklet of 20 pages, 4½ x 7 in., the title of which, "Factors Affecting Grinding Wheel Selection," indicates the subject matter dealt with. A table of grinding wheel recommendations for various kinds of work and operation is included.

**Welding and Cutting Apparatus.**—Bastian-Blessing Co., 125 West Austin Avenue, Chicago. Catalog No. 27. Rego welding, cutting, brazing, soldering and lead burning outfits are described and illustrated, one section being devoted to complete outfits, trucks, goggles and hose; another to torches and kerosene burners, and a third to regulators, gages, manifolds, acetylene generators, and fittings. A price list and telegraph code covering the items in the catalog is separate.

**Shipbuilding Furnaces.**—Charles F. Kenworthy, Inc., Waterbury, Conn. Bulletin No. 82 describes plate and angle furnaces and a flanging or boilermaker's furnace for shipbuilders' use and designed for burning coal, gas or oil fuel. Chamber widths for the plate heating furnaces run from 48 to 144 in., with lengths up to 13 ft. 6 in.; for the angle or bar heating furnaces from 24 to 42 in. and with lengths up to 60 ft.

**Sheet Metal Blocking Machines and Wrapping Attachments.**—Charles F. Kenworthy, Inc., Waterbury, Conn. Bulletin No. 86 describes a wrapping machine designed for brass mill work and particularly for minimizing labor.

**Portable Rivet Furnace.**—Charles F. Kenworthy, Inc., Waterbury, Conn. Bulletin No. 81 is a leaflet describing a vertical oil-fired furnace for heating rivets up to 1½ in. diameter. Its capacity is 500 to 600 ¾-in. rivets per hour. It can be brought up to full heat from cold in 10 min.

**Non-Oxidizing Annealing Furnaces.**—Charles F. Kenworthy, Inc., Waterbury, Conn. Bulletins Nos. 80-N, 83-N, 87-N, 89-N, 90-N, 91 and 93 are devoted to different types of annealing furnaces designed to avoid all danger of oxidizing products in process of treatment. The different types include vertical and horizontal furnaces of various sizes, from those used by jewelers, with annealing capacity as low as 170 cu. in., to furnaces capable of handling as much as 5000 lb. per hour. These are all illustrated and briefly described in the bulletins, which give certain particulars of specifications.

**Over-Fired Annealing Furnaces.**—Charles F. Kenworthy, Inc., Waterbury, Conn. Bulletin No. 81 describes and illustrates furnaces for annealing brass, copper, German silver and steel products, varying from small furnaces to those of the car type. The latter are made in sizes from 36 to 84 in. door opening and with chambers from 10 to 20 ft. long.

**Billet Heating Furnaces.**—Charles F. Kenworthy, Inc., Waterbury, Conn. Bulletin No. 85 illustrates and describes a continuous furnace for use in rod mills, extrusion plants, shrapnel plants and hot tube rolling mills in sizes ranging from 30 to 84 in., with heating chamber length from 12 to 30 ft.

**Hot Metal Handling Machinery.**—Charles F. Kenworthy, Inc., Waterbury, Conn. Bulletin No. 92 illustrates and describes pan pulling machines and crane tongs, particularly for use in wire and tube mill work and for handling material in bulk.

**The Magic Dial.**—W. S. Ray Mfg. Co., San Francisco. An 8-page pamphlet describing and illustrating an auto-



matic oil burner for use in connection with domestic heating systems. A folding chart completes the illustrations. The arrangement is fitted for oil fuel, gas for ignition, electricity to control the burner through a thermostat and means for controlling oil and air automatically.

**Rotary Fuel Oil Burner.**—W. S. Ray Mfg. Co., San Francisco. Catalog A of 12 pages deals with high pressure installations for stationary and marine boilers. It is thoroughly illustrated both by photographs and drawings and covers equipment from 6 to 600 hp. per unit.

**Rotary Fuel Oil Burner.**—W. S. Ray Mfg. Co., San Francisco. Catalog C is devoted to low pressure boilers, furnaces and special industrial uses. It runs through sizes from 6 to 600 hp. per unit, and is illustrated in the catalog by both drawings and photographs.

**Air Compressors and Vacuum Pumps.**—Pennsylvania Pump & Compressor Co., Easton, Pa. A 32-page catalog, well illustrated, describing details of the equipment carried in the title. The compressors listed as power-driven run from 44 to 875 cu. ft. of free air per minute. Steam-driven compressors are covered, from 67 to 875 cu. ft. Power-driven vacuum pumps are listed, running from 311 to 2502 cu. in. piston displacement, while steam-driven vacuum pumps of 572 to 2502 cu. in. are covered. Air receivers are described, with diameters from 16 to 48 in.

**Suction Gas Producer Plates.**—Smith Gas Engineering Co., Dayton, Ohio. In Bulletin No. 19, June, 1923, 36 pages are devoted to descriptions of producer systems of the mechanically operated type, as well as stationary producers designed for use with miscellaneous fuels. Numerous illustrations are given of producers in service as well as details of parts. The producers described range from 25 to 400 hp., with a rating of 10,000 B.t.u. per hour per hp.

## BOOK REVIEWS

**An Introduction to the Study of Metallography and Macrography.** By Leon Guillet and Albert Portevin, translated by Leonard Taverner. Size 6 in. x 9½ in. Pages xv + 289; 117 plates and numerous illustrations. McGraw-Hill Book Co., Inc. Price, \$7.

Although a young science, metallography already possesses an extensive literature in many countries. The present volume is a translation of a book by the eminent French workers, Dr. L. Guillet and A. Portevin, and is an introduction to the whole field of metallography covering both ferrous and non-ferrous metals and alloys. It is based on the course of instruction given by the authors at two of the well-known Paris schools or universities, namely the Ecole Centrale des Arts et Manufactures and the Conservatoire National des Arts et Metiers.

Part I deals with metallography and constitutes the major part of the book, including 256 pages. It is divided into five chapters. The first one of 22 pages is on the preparation of microsections. The authors define metallography in a very narrow way "as the microscopical study of polished and etched metallurgical specimens," but fortunately they treat the subject in a much broader way in their book. This first chapter, while it contains nothing particularly new, is a very clear description of methods of polishing and etching microsections.

The second chapter of 64 pages deals principally with equilibrium diagrams and thermal analysis, and has a good section on the relation between the equilibrium diagram, the microstructure and the physical properties of metals and alloys. Chapter 3 of 61 pages deals with the various mechanical tests, mechanical and heat treatment, and the relation between the diagrams, the treatment and the final properties.

Chapter 4 of 71 pages, the longest in the book, takes up the metallography of iron, steel and ferrous alloys. A short table gives a commercial classification of steels which looks strange to us. For instance, low carbon steel is given as 0.25 to 0.40 per cent, and medium carbon steel as 0.40 to 0.60 per cent. An interesting feature is that the so-called stable equilibrium diagram of the iron-graphite series is described in detail as well as the usual iron-carbide diagram. This chapter con-

**The Coxe Stoker.**—Combustion Engineering Corporation, Broad Street, New York. An 8-page catalog illustrating and describing a traveling grate stoker designed for industrial use, with particular reference to burning coke, breeze and small size anthracite coal. A table of tests made in five different plants gives much information.

**Pyrometers.**—Brown Instrument Co., Philadelphia. Booklet with title of "The Automatic Control of Temperature in the Heat Treating of Steel." Two installations of the company's automatic control pyrometer are described and illustrated and the features of the pyrometer are outlined. The instrument is shown installed in an electric furnace, and the company's cold junction compensated pyrometer is briefly taken up. Size 7¼ x 10½ in., 12 pages.

**Ground Form Cutters.**—Brown & Sharpe Mfg. Co., Providence. Booklet of 12 pages devoted to the advantages of ground form gear, spline shaft and sprocket cutters.

**Grinding and Polishing Machines.**—L. Best Co., 28 West Broadway, New York. Booklet describing and illustrating the features of the company's ball bearing grinding and polishing machines, two sizes of which are available. Special exhaust type safety hoods are also described.

**Lathe and Drill Chucks.**—Westcott Chuck Co., Oneida, N. Y. Catalog No. 510 giving dimensions and list prices of the company's scroll combination lathe chucks, cutting-off chucks, spur geared scroll combination lathe chuck, scroll universal lathe chuck, and the IXL independent and two-jawed chucks. Little Giant, double grip, Little Giant auxiliary screw and the Oneida are among the drill chucks shown.

tains a detailed description of the constituents and structures of carbon steels, and also a full section dealing with the alloy steels along the lines of Guillet's book: *Les Aciers Speciaux*. The final chapter of Part I, containing 59 pages, takes up the brasses, bronzes, bearing metals and other industrial non-ferrous alloys.

Part II, while relatively short, is interesting, and gives methods and results of macrographic examination. Attention may be drawn to the numerous plates and illustrations which constitute a valuable feature of the book. On the whole they are excellent, but it should be mentioned that the only evidence of poor translation is in some of the titles. Also the magnifications used for the micrographs are very numerous, such as 18, 27, 44, 45, 57, 80, 85, 170, 180, 280, etc., as well as the standard magnifications in general use here.

In general it may be said the book is of interest and value particularly as showing a French method of teaching the subject. G. B. WATERHOUSE.

## Iron and Brass Valves, Cocks, Pipe Fittings

A new flexible covered catalog of the Pittsburgh Valve & Fittings Co., Barberton, Ohio, has been received, embracing 355 pages of data on the general subject indicated by the title. There is a large amount of tabular matter covering dimensions, capacity and prices for hundreds of different sizes and types of equipment, in addition to useful tables of bolts, pipes, pipe threads, steam table and circular measurement.

The work is well indexed and should find a place in the library of engineers specifying equipment of this type. The company calls attention to a large increase in the variety of goods made, in response to increasing needs and demands of the trade, and stands ready to amplify in any necessary way the information contained in the catalog pages.

## New Books Received

**American Iron, Steel and Heavy Hardware Association.** Report of Fourteenth Annual Convention. Pages 160, 6 x 9 in. Published by American Iron, Steel and Heavy Hardware Association, Marbridge Building, New York.

**Walzen und Walzen-Kalibrieren.** By Wilhelm Tafel. Pages 303, 6 x 9 in.; illustrations 186; second edition. Published by Fr. Wilh. Ruhfus, Königshof 23, Dortmund, Germany. Price, \$1.60.

## Plans of New Companies

The McVoy Sheet & Tin Plate Co., 2042 Grand Central Terminal, New York, has been reorganized from the sheet and tin plate company of Eugene J. McVoy, Chicago, organized in 1877. The new corporation will act as distributor of blue annealed and tank steel, tin and terne plate, sheet copper and zinc. Its only item of manufacture is galvanized sheets. Capital employed will be about \$1,000,000. Mr. McVoy is president. Main office is at 344-50 West Austin Avenue, Chicago. Plans are not yet completed.

The Star Metal Box Co., 509 West Nineteenth Street, New York, is being reorganized and incorporated with \$100,000 capital stock, to manufacture metal boxes and containers for public service and industrial use. The incorporators, S. and I. Halper and J. N. Arnstein, formerly conducted such a business, their buildings having been destroyed by fire. They are now looking for a factory somewhere in Brooklyn, which will double capacity. It is likely that additional equipment will be needed. S. Halper is president.

The Warner Speed Control Corporation of America, New York, has been incorporated with capital stock of \$20,000 to manufacture motors, engines and kindred products. The company is still in the formative stage and has not completed plans for operation. W. G. Lovatt and G. and A. Worsnop are the incorporators. Address care of H. S. Hechheimer, 1540 Broadway.

The Fox Hardware Co. New York, has been organized with capital stock of \$50,000 to manufacture and deal in hardware products. Actual operation will be delayed for a time, pending the disposal of organization matters. B. Chess, 302 Broadway, is corporate representative.

The American Steam Specialty Corporation, New York, has been organized to manufacture steam equipment, principally valves. It is now looking for a plant and hopes to proceed with operations as soon as plant and equipment are provided. Manufacturing will be on a limited scale. U. S. Hamel, 206 Broadway, represents the company.

The Grayson & Dressel Mfg. Co., Ashland, Ky., has been incorporated with capital stock of \$20,000 to manufacture stoves, gas appliances and hardware specialties. Plans are not yet definitely decided but when the time arrives, the company will conduct its own operations. Charles J. Grayson and John B. Dressel head the company.

The Seamless Tube Co. of Wisconsin has been organized at Appleton, Wis., by William Geenan, A. G. Brusewitz and Matt Rossmel, who purchased the property of the Reliance Motor Truck Co. at receiver's sale some time ago. Capital stock is \$400,000. For several weeks repairing has been done, and also some general machine work. The company's main product will be seamless tubing.

The Surplus Steel & Iron Service, Chicago, has been organized with offices at 327 South La Salle Street, to handle surplus stocks. W. W. Decker, for 20 years with the Cleveland Co-operative Stove Co., and F. X. Devlin, who was formerly purchasing agent for Spang, Chalfant & Co. and the National Tube Co., head the new organization.

The Universal Pipe Machine Co., 128 Monroe Avenue, Memphis, Tenn., has been organized with \$50,000 capital stock to manufacture power-operated pipe threading machines and parts. A few of these machines are now being made by contract but later the company may undertake its own manufacturing. Joseph L. Tanner is secretary.

The Hunter Crucible Steel Co., with works and general offices at 6600 Grant Avenue, Cleveland, has acquired the plant and equipment of the Electric Steel & Forge Co. and has conducted its business in crucible steel for some time. The latter company is no longer in business.

The Western Metal Crafts Co., 2037 West Sixteenth Street, Los Angeles, Cal., recently organized to manufacture metal products, has equipped a plant and is now in operation. Paul Moyer is president.

The Honecker No-Air Tire Corporation, Brookville, Ind., has been organized to manufacture tires for automotive use. Some time will be consumed in completing preliminary preparations before actual operation will be considered. John C. Morin is manager.

The Combined Drill & Screw-Set Co., Brooklyn, recently incorporated with capital stock of \$50,000, will manufacture a drill invented by Sydor Solop, who heads the company. The company is in the process of organization, and probably will not take any steps to begin manufacture or to put the appliance on the market for some time.

The Crown Mining & Mfg. Co., Dahlonega, Ga., with executive offices at 402-8 Grant Building, Atlanta, Ga., has been incorporated with capital stock of \$1,000,000 to operate mining properties and to manufacture from the mined products.

Iron, magnetite, copper and sulphur will be mined. In prospecting and operating the company will require considerable mining, transportation, smelting, power plant and electrical equipment. The management is particularly interested in improved ore crushing and concentration apparatus. Data and catalogs should be mailed to Box 1571, Atlanta. John B. Hutchins is secretary-treasurer.

The Giant Spring Bumper Co., New York, recently incorporated with capital stock of \$50,000, is manufacturing double-strip spring bumpers for automobiles. The plant is located at 425 East 102d Street in conjunction with the plant of the International Metallic Casket Co. V. Breuer, P. Salkin and Philip Leschnik, incorporators of the Giant Spring Bumper Co., also control the International Metallic Casket Co. No additions of machinery are likely at the present time.

The Henry Stadlmair Co., Inc., New York, incorporated for \$100,000 to manufacture talking machines and parts, will confine itself to a jobbing business for the present.

The Saginaw Handle Co., Saginaw, Mich., recently organized to manufacture various kinds of handles for industrial use, has its factory well under construction. It will likely require some equipment after building is finished, but it is not yet in a position to name its needs. J. A. Max is manager.

The Bridgeport Cabinet Works, 112-14 South Avenue, Bridgeport, Conn., has been organized to build and repair automobile bodies, office fronts and fixtures, having acquired a business already established. At present it has buildings and equipment for immediate needs. C. A. Dornack heads the company.

The Riverside Coke & Iron Co., with a capital stock of \$250,000, has been incorporated as a subsidiary of the Mississippi Valley Iron Co., St. Louis. The new company will produce coke at the plant of the Mississippi Valley Iron Co. for its own consumption.

## Trade Changes

Roehm & Davison, 6450 Mack Avenue, Detroit, have moved to 3131 Beaufait Street.

D. G. McMillan has disposed of his interests and retired as president of the National Gage & Equipment Co., LaCrosse, Wis., manufacturer of dash gages and metering devices for automobiles. He served as trustee of the bankrupt Hans Motor Equipment Co. in 1914 and with P. M. Gelatt organized the present company in 1915, developing it into one of the largest industries in the Northwest. Mr. Gelatt, formerly vice-president and secretary, has been elected president; J. M. LaVaque, vice-president and treasurer; P. E. Stroup, Detroit, vice-president and sales manager; J. E. Richmond, secretary.

The Broad Gage Iron Works, Inc., 80 Portland Street, Boston, ornamental iron workers, has leased for a long term of years manufacturing quarters at 193 Friend Street, that city.

Walter B. Enck, for several years assistant to the president, Donner Steel Co., Buffalo, but who recently has been engaged in the coal and coke business in Philadelphia on his own account, has accepted the position of Philadelphia resident manager of the Pioneer Coal & Coke Co., Oliver Building, Pittsburgh. He will retain his present offices in the Pennsylvania Building, Philadelphia.

The Morgan H. Grace Co., Inc., 301 Produce Exchange, New York, has taken over the import and export business of Bush & Daniels, who are retiring from active business. Mr. Daniels will remain with the company as a director. Business will be continued and expanded along present lines.

General sales offices of the Keokuk Electro-Metals Co. have been moved to Keokuk, Iowa, where furnaces and executive offices are located.

The Heine Boiler Co., St. Louis, has made the following changes in sales organization, effective Aug. 1: George F. Murphy, having completed the reorganization of the New York office, has taken charge of the Philadelphia territory with headquarters in the Pennsylvania Building. Harold P. Childs, formerly special representative of the executive offices of the General Electric Co., New York, has become associated as manager of the New York office with headquarters at 11 Broadway. J. R. Fortune, formerly manager of the Detroit office, has assumed charge of the territories formerly covered by the Pittsburgh, Cleveland and Detroit offices, and will maintain offices in the Dime Bank Building, Detroit, and in the Park Building, Pittsburgh. The Cleveland office has been discontinued.

The Miller Spouting Co., manufacturer of automobile and hardware stampings, West Bend, Wis., has changed its name to the Metal Stamping Corporation.



# Machinery Markets and News of the Works

## DULL, UNPROFITABLE MARKET

### Machine-Tool Business Quiet in Nearly All Districts

#### Only Business of Importance Is Purchases by Several Railroads, None of Large Volume

Mid-summer quiet continues in all of the leading machine-tool markets, the only business to relieve the dull monotony being purchases by several railroads ranging from a single tool up to 10 or a dozen.

The Chicago & North Western has bought about 10 machines which were listed in THE IRON AGE of June 28. The Chicago, Burlington & Quincy, according to latest advices from Chicago, will close on its list within the next fortnight. The Elgin, Joliet & Eastern is also expected to close very soon on its inquiry of long

standing. A few orders are being placed this week by the Illinois Central. The Nickel Plate has ordered nine tool grinders, but has not yet closed on another inquiry for about 15 miscellaneous tools.

An interesting inquiry, which may indicate future business, comes from the Pennsylvania Railroad, Central Region, which is taking bids on 34 tools. This road has not indicated just when orders will be placed.

The Southern Railway has bought a planer, four boring mills, a wheel press and a carwheel borer. The Nashville, Chattanooga & St. Louis has ordered a 3500-lb. steam hammer and the Georgia, Florida & Alabama has bought a 1500-lb. steam hammer.

The machine-tool trade sees some signs of returning confidence, but it is not believed that any marked improvement in the demand for tools may be expected before September.

## New York

NEW YORK, Aug. 7.

**R**AILROAD buying, the chief activity in this district for the past few weeks, has quieted down considerably, although a number of tools are still pending on lists of different roads. Few new inquiries, even for single tools, are reported the past week. The used tool market is also quiet. A recent railroad purchase was that of the Southern Railway and included a 42-in. planer, two 44-in. boring mills, a 400-ton wheel press, a carwheel borer, two side-head boring mills. The Nashville, Chattanooga & St. Louis Railroad has closed on a 3500-lb. steam hammer, and the Georgia, Florida & Alabama Railroad on a 1500-lb. steam hammer. The American Laundry Machine Co., Cincinnati, has bought a 6-ft. boring mill.

Contract has been let by the Independent Metal Box Corporation, 652 Metropolitan Avenue, Brooklyn, to the Wexler & Levine Realty Co., 637 Metropolitan Avenue, for a new one-story plant. Levy & Berger, 375 Fulton Street, are architects.

Bids will be received by the Bureau of Supplies and Accounts, Navy Department, Washington, until Aug. 21, for 10,530 lb. of connecting rods for use at the Brooklyn Navy Yard, schedule 1186.

The W. B. McLean Mfg. Co., 319 Freeman Avenue, Long Island City, manufacturer of fixtures, show cases, etc., with headquarters at 3042 Bigelow Street, Pittsburgh, has tentative plans for a new reinforced-concrete plant on site lately acquired at Academy Street and Freeman Avenue.

The Titanium Pigment Co., 94 Fulton Street, New York, a subsidiary of the National Lead Co., 111 Broadway, has taken title to the former plant of the Mineral Refining & Chemical Corporation, St. Louis, on a 17-acre tract. The new owner will remodel the plant and install additional equipment.

The Goodyear Tire & Rubber Co., 120 Broadway, New York, has leased property at Eleventh Avenue and Fifty-eighth Street, 100x250 ft., for the erection of a new six-story building to consolidate its local plant and branches, including that at Long Island City. The financial offices will be retained at the Broadway address noted.

The Norma Co. of America, Inc., Anable Avenue, Long Island City, manufacturer of ball bearings, etc., has engaged Francisco & Jacobus, 511 Fifth Avenue, New York, architects, to prepare plans for the initial unit of its proposed works at Glenbrook, near Stamford, Conn., to be one-story, 160x325 ft.

The truck and car axle division of the Savage Arms Corporation, Utica, N. Y., and Sharon, Pa., consisting of dies, tools, patterns, patents, etc., has been acquired by the Wisconsin Parts Co., Oshkosh, Wis., which will continue manu-

facture at the latter plant. Extensions are being made and the equipment will be removed to the Oshkosh works.

Power equipment, conveying and other machinery will be installed in the two-story incinerator plant to be erected at Woodhaven, L. I., by the municipal works department, Borough of Queens, 68 Hunterspoint Avenue, Long Island City, estimated to cost \$240,000, for which bids will be asked about Aug. 20. Joseph Powers, 8003 Boulevard, Rockaway Beach, L. I., is engineer.

The Nathan Novelty Mfg. Co., 55 Fifth Avenue, New York, manufacturer of automobile equipment and accessories, has purchased a factory on 182d Street, between Clinton and Prospect Avenue, 150x207 ft., for a new works.

The Mesabi Iron Co., 25 Broad Street, New York, has arranged for a stock issue of \$1,572,536, the entire proceeds to be used for extensions in its sintering plant to increase the capacity from 250 to 800 tons a day.

The Pathe Phonograph & Radio Corporation, 18 East Forty-second Street, New York, has leased the five-story building at 150 East Fifty-third Street for a new plant and will install equipment at once.

Manual training equipment will be installed in the three-story and basement junior high school to be erected at Hawthorne Avenue and Culver Streets, Yonkers, N. Y., to be known as the Nathaniel Hawthorne school, estimated to cost \$300,000, for which bids will be taken at once on a general contract. G. H. Chamberlain, 18 South Broadway, is architect.

In connection with a merger of the Calumet & Hecla Mining Co., 25 Broadway, New York, with the Ahmeek Mining Co., Centennial Copper Co., and affiliated interests, plans are under consideration for the construction or acquisition of plants for the manufacture of brass and copper products, to be operated in conjunction with the mining properties in the Michigan copper districts.

A machine shop will be installed in the one-story automobile building to be erected by the Department of Plant and Structures, Municipal Building, New York, on 181st Street, 80x210 ft., estimated to cost \$150,000. Max Hausle, 3307 Third Avenue, is architect.

The Superintendent of Lighthouses, Staten Island, N. Y., will receive bids until Aug. 15 for two industrial electric trucks and six trailer trucks, proposal 25404.

A machine shop and parts department will be installed in the two-story automobile service building, 115x118 ft., to be erected at Boscobel Avenue and 172d Street, New York, by Herbert Mitchell, care of John J. Dunnigan, 394 East 150th Street, architect, estimated to cost \$350,000.

The New Jersey Commercial Body Co., 235 Elizabeth Avenue, Newark, has awarded a contract to Enstace Brothers, 111 Academy Street, for a new one-story automobile body manufacturing plant, 100x280 ft., at 353-67 Frelinghuysen Avenue, estimated to cost \$85,000. W. Orrin Bartlett, 738 Broad Street, is architect. W. H. Henderson is president.

The Okonite Co., 501 Fifth Avenue, New York, manufacturer of insulated wires and cables, with plant at Passaic, N. J., has arranged for a note issue of \$600,000, a portion of the proceeds to be used for extensions. H. Durant Cheever is president.

Fire, July 26, destroyed the plant of the Bound Brook Crushed Stone Co., Bound Brook, N. J., in the Chimney Rock Ravine section, with loss estimated at \$200,000, including stone-crushing and other machinery. It is planned to rebuild.

Work will commence on extensions in the power house at the Essex County Sanatorium, Verona, N. J., by the Board of Freeholders, Court House, Newark, estimated to cost \$50,000. Runyon & Carey, 845 Broad Street, Newark, are engineers.

Bids will be received by the Chester Township Committee, Maple Shade, N. J., until Aug. 14, for one steel standpipe, 20 ft. in diameter and 120 ft. high. Remington & Vosbury, 601 Market Street, Camden, N. J., are engineers.

The Associated Utilities Co., care of William Braun & Co., 30 Church Street, New York, engineers, is arranging for the erection of a new ice-manufacturing and cold storage plant at Newark, estimated to cost \$1,000,000 with machinery.

## New England

Boston, Aug. 6.

**T**HE most important transaction the past week involved a 50-in. geared head lathe and a fairly large squaring shear, purchased by the General Electric Co., Pittsfield, Mass.; additional press equipment and a large punch and shear, by a Massachusetts textile machinery maker; and a five-ton I-beam crane, by the Cape Ann Anchor Works. Some New England builders, confining their activities to machine tools alone, are beginning to feel the business pinch not only in this but in other territories, the volume of unfilled orders on their books having declined rapidly the past month. British buyers are sounding out this market for miscellaneous used equipment. In the absence of new inquiries, local machine tool dealers are confining efforts to revive old inquiries.

Makers of electric trucks report a material improvement in business the past fortnight, good orders having been placed locally as well as in Bridgeport and New Haven, Conn. The Yale & Towne Mfg. Co., Stamford, Conn., reports an improvement in the export demand for electric trucks. Some of the smaller New England makers of tools, dies, etc., are exceptionally active. The small tool business generally, however, is slowing up. Curtailment in operations of New England cotton mills has checked what heretofore was an active transmission market. The American Steel & Wire Co., Worcester, Mass., will spend a large share of \$300,000 on transmission in changing over some of its equipment to motor drive.

Bird & Sons, Inc., South Walpole, Mass., has decided to hold in abeyance its proposed one-story and basement machine shop, 80 x 140 ft.

Work has been started by the Tileston & Hollingsworth Co., 892 River Street, Hyde Park, Boston, paper manufacturer, on a two-story, 40 x 100 ft. addition to cost approximately \$100,000.

The recent auction sale of the George H. Adams Needle Co., Franklin, N. H., to Frank R. Woodward, Hill, N. H., has been confirmed by the courts. Preliminary plans have been made for improvements, including the development of water-power for the operation of machinery.

The Acme Mfg. Co., Bangor, Me., manufacturer of pipe clamps, etc., will take bids this month for a new one-story plant. G. A. Hershey is treasurer.

The Blackstone Valley Gas & Electric Co., Pawtucket, R. I., will commence the erection of a one-story power house, 100 x 120 ft., on West Park Place, Woonsocket, R. I., estimated to cost \$60,000. Stone & Webster, Inc., 147 Milk Street, Boston, is engineer.

The French Mfg. Co., Robbins Street, Waterbury, Conn., manufacturer of bronze and copper tubing, etc., has awarded a general contract to the Torrington Building Co., Torrington, Conn., for a one-story addition, 72 x 120 ft., estimated to cost \$30,000. W. E. Hunt, Torrington, is architect.

The American Schaeffer & Budenberg Corporation, 338 Berry Street, Brooklyn, N. Y., a subsidiary of the American Steam Gage & Valve Mfg. Co., 208 Camden Street, Boston, has taken over the branch plant of the parent organization at 3 Grand Street, Worcester, Mass., for the establishment of new works to manufacture gages, valves, etc.

The American Thermos Bottle Co., 366 Madison Avenue, New York, has tentative plans for the erection of a new factory in the vicinity of Hartford, Conn.

A one-story power house will be erected at the mill of the Rathbun Knitting Co., Woonsocket, R. I., to be 40 x 44 ft. Knight C. Richmond, Providence, R. I., is engineer.

The Hopedale Mfg. Co., Milford, Mass., manufacturer of textile machinery, will build a one-story foundry, 80 x 90 ft.

The Scovill Mfg. Co., Waterbury, Conn., manufacturer of brass goods, etc., has awarded contract to the Berlin Construction Co., Berlin, Conn., for extensions to cost \$50,000.

Manning, Bowman & Co., Pratt Street, Meriden, Conn., manufacturer of enameled ware, etc., has tentative plans for additions to cost approximately \$100,000, including equipment.

The Ashuelot Gas & Electric Co., Concord, N. H., is planning the construction of a new hydroelectric power plant in the vicinity of Marlboro, N. H., to cost about \$100,000.

The Hartford Electric Light Co., Hartford, Conn., is perfecting plans for an addition to its South Meadows power plant to double the present capacity. A new steam-turbo generator and auxiliary machinery will be installed. Extensions will be made in the transmission system.

P. K. Lindsay & Co., 384 Atlantic Avenue, Boston, manufacturer of air compressors, etc., is planning the installation of an engine lathe, bench type, 9-in. swing.

The Bristol Co., Waterbury, Conn., manufacturer of measuring instruments, etc., has awarded a general contract to the Clark Construction Co., 168 Grand Street, for a one-story addition to its plant in the Platts Mills section, 50 x 100 ft., estimated to cost \$50,000.

Power equipment, ovens, conveying and other machinery will be installed in the two-story and basement addition, 60 x 100 ft., to be erected at the plant of the Dexter Baking Co., Waterbury, Conn. Francisco & Jacobus, 511 Fifth Avenue, New York, are architects.

## Philadelphia

PHILADELPHIA, Aug. 6.

**J**OSEPH PICKARD'S SONS, Inc., Palethorp and York Streets, Philadelphia, manufacturer of wire products, has taken bids on a general contract for a new plant. Clarence E. Wunder, 1415 Locust Street, is architect.

The Supply Officer, Navy Department, Philadelphia, will take bids at once for 24 motor starters, requisition 651; and for 2800 steel shackles, aero requisition 642.

Contract has been awarded by the Yellow Cab Co., 1208 North Thirty-first Street, Philadelphia, to Ketcham & McQuade, Philadelphia, for a new service building, parts and automobile repair works estimated to cost \$120,000.

The Philadelphia Commercial Museum, Thirty-fourth Street, has received an inquiry from Balmuccia, Italy, for American machinery to manufacture iron pipe lasts.

The Edward G. Budd Mfg. Co., Twenty-eighth Street and Hunting Park Avenue, Philadelphia, manufacturer of steel automobile bodies, is receiving bids on a general contract for the erection of an addition at Hunting Park Avenue and Wissahickon Street. The Ballinger Co., Twelfth and Chestnut Streets, is architect.

Plans have been completed for an addition to the power house of the University of Pennsylvania, Thirty-fourth and Spruce Streets, Philadelphia, estimated to cost \$45,000.

A power plant will be constructed by the Viscose Co., Marcus Hook, Pa., at its proposed artificial silk plant in the Holmesburg-Tacony section, Philadelphia, estimated to cost \$3,000,000.

The Acme Rubber Mfg. Co., East State Street, Trenton, N. J., manufacturer of tires and mechanical rubber products, is having plans drawn for a two-story addition estimated to cost \$50,000. William A. Klemann, First National Bank Building, is architect.

A. F. Stonch & Co., Lock Haven, Pa., are planning the installation of a motor-driven cut-off saw, motor-driven molder, chain mortiser and other equipment at their wood-working plant. V. R. Garleb, P. O. Box 87, heads the company.

S. S. Fretz, Jr. & Co., Philadelphia, has been chartered under State laws to take over and expand the plant and business of the company of the same name at Twenty-third and Sedgley Streets, manufacturer of steam fittings, pipe, etc. Raymond Groff is treasurer.

The William Ellis Cement Products Co., Norristown, Pa., recently organized, has perfected plans for a new plant in Upper Merion Township for the manufacture of cement blocks and kindred products. William Ellis heads the company.



## The Crane Market

QUIETNESS continues in the overhead and locomotive crane markets. Not many orders are noted, but a number of awards are still pending. It is reported that the General Electric Co. will not be in the market for cranes for the plant under construction at Philadelphia for at least a month. Among pending inquiries are the 15-ton gantry and 5-ton overhead traveling cranes for the Pennsylvania Railroad, Philadelphia; a 25-ton and a 30-ton overhead traveling crane to be purchased by Stone & Webster, Boston, Mass., for the Ford plant at Iron Mountain, Mich.; a 20-ton, 23-ft. 8-in. span overhead traveling crane, either new or used for the Fitzgibbons Boiler Co., 47 West Forty-second Street, New York; a 100-ton overhead traveling crane for Fond du Lac, Wis.; a 60-ton overhead crane for Freemansburg, Pa., and a 10-ton gantry crane to handle  $\frac{1}{2}$ -cu. yd. bucket, inquired for by the Phoenix Utility Co., 71 Broadway, New York, which has also received prices on material for building a small jib crane; a 25-ton overhead crane for the Brooklyn Edison Co., Brooklyn, N. Y., and two 15-ton special overhead cranes, expected to close this week, for the Railway Steel Spring Co., 30 Church Street, New York. Bernard H. Prack, architect, Keystone Building, Pittsburgh, is receiving bids on a 15-ton, 31-ft. 2-in. span crane for Emeryville, Cal.

A number of inquiries for cranes for export, especially to Japan and China, are pending, but prospects of obtaining such business in the face of foreign competition are considered remote by most crane builders. On a recent tender of the Central Railroad of Brazil, for two 22-ton, 52-ft. span, 5-motor overhead traveling cranes, the range of prices quoted by the American, British, French, Belgian and German bidders was wide. All quotations were, c.i.f. Rio de Janeiro, Brazil. The two American bids were the highest of the fifteen quotations submitted, being \$15,585 and \$15,625 respectively. The next highest bid was on a Swedish built crane and totaled \$12,197.50 based on today's exchange rate. The German bids, which were submitted in pounds sterling, ranged from \$6,726 to \$8,960. The two British bidders quoted \$9,357.15 and \$11,012.40 respectively, while the Belgian bid submitted by the Willebroeck, Belgium, was the lowest at \$5,046.70 based on the current rate of exchange between the Belgian franc and the dollar of about 4.63c. per franc. The bids were as follows:

|   |                 |             |
|---|-----------------|-------------|
| Bedford Engineering Co., England .....        | £2,415          | \$11,012.40 |
| Paul Ryermann, Berlin, Germany .....          | £1,675          | 7,637.50    |
| Niles-Bement-Pond Co., United States .....    |                 | 15,585.00   |
| Graham Bros. Aktiebolag, Stockholm .....      | Rs. 119,000.000 | 12,197.50   |
| Paul Weyerman G.m.b.h., Germany .....         | £1,541 10s.     | 7,028.25    |
| Societe des E. G. Houplain, France .....      | 111,465 fr.     | 6,432.65    |
| Carl Flohr A. G., Berlin, Germany .....       | £1,945          | 8,869.20    |
| Deutsche Maschinenfabrik A. G., Germany ..... | £1,965          | 8,960.40    |
| Siemens-Schuckert Werke, Germany .....        | Rs. 66,170.000  | 6,782.40    |

Manual training equipment will be installed in the new two-story senior and junior high school to be erected at Midland, Pa., estimated to cost \$300,000, for which bids will soon be asked on a general contract. W. G. Eckles, Lawrence Savings & Trust Building, New Castle, Pa., is architect.

The Greenwood Light & Power Co., Millville, Pa., is being organized as a subsidiary of the Pennsylvania Power & Light Co., Allentown, Pa., to take over and expand the local system of the Millville Electric Light Co., recently acquired by the parent company.

Willson Goggles, Inc., Washington and Second Streets, Reading, Pa., manufacturer of industrial optical products, eye protectors, etc., is planning the construction of a new unit, estimated to cost \$500,000 with precision and other machinery. Dr. Frederick Willson is president.

Manual training equipment will be installed in the two-story high school, 75 x 250 ft., to be erected at Ridgway, Pa., estimated to cost \$175,000, for which bids are being asked on a general contract until Aug. 25. Maurice E. Kressler, 13 Fourth Street, Harrisburg, Pa., is architect.

The Ideal Auto Parts Co., 1013 Market Street, Harrisburg, Pa., has tentative plans for the establishment of a branch works between Harrisburg and Middletown, Pa., Charles E. Craft and J. A. Blessing head the company.

The Worthington Pump & Machinery Corporation, 115 Broadway, New York, will retain the ownership of its plant at Hazleton, Pa., valued at \$4,000,000, and negotiations for the purchase by a British automobile manufacturing company, to be used for an American works, have been broken off.

|  |             |            |
|--|-------------|------------|
| Stothert & Pitt, Bath, England..           | £2,052      | \$9,357.15 |
| Willebroeck, Belgium.....                  | 109,000 fr. | 5,046.70   |
| Ardeltwerke G.m.b.h., Germany              | £1,475      | 6,726.00   |
| Rhein Metalwerke und Maschinenfabrik ..... | £1,771      | 8,075.75   |
| Whiting Corporation, United States .....   |             | 15,625.00  |
| Le Titan Anversois, Belgium...             | 153,800 fr. | 7,120.95   |

Among recent purchases are:

Phoenix Utility Co., 71 Broadway, New York, a 12-ton, 20-ft. span, hand power crane for export to Guatemala, Central America, from Alfred Box & Co.

Central Maine Power Co., Augusta, Me., two 15-ton hand power cranes from the Whiting Corporation.

Northern New York Utilities, Inc., 30 East Forty-second Street, New York, a 40-ton, 30-ft. span and a 20-ton, 26-ft. span electric traveling crane from the Northern Engineering Works.

Detroit Edison Co., Detroit, Mich., a 25-ton, 3-motor, overhead crane and a small hand power crane from the Northern Engineering Works.

Binghamton Light, Heat & Power Co., Binghamton, N. Y., a 75-ton, 50-ft. span overhead traveling crane with 10-ton auxiliary from the Northern Engineering Works.

Sandusky Gas & Electric Co., Sandusky, Ohio, a 30-ton, 33-ft. span hand power crane from the Northern Engineering Works.

Jenkins Brothers, New York, a 5-ton, 3-motor and a 1-ton, 1-motor, overhead traveling crane from the Northern Engineering Works.

Central Railroad of New Jersey, Jersey City, N. J., three 30-ton, 50-ft. boom locomotive cranes from the Ohio Locomotive Crane Co.

Fruit Growers Express, Washington, D. C., a 20-ton locomotive crane from the Browning Co.

Eagle Iron Works, Des Moines, Iowa, a 6-ton, 40-ft. span electric traveling crane from the Roeper Crane & Hoist Works.

Carpenter Steel Co., Reading, Pa., six 5-ton electric transfer cranes, 29-ft. span and two 5-ton, cage-operated electric hoists from the Roeper Crane & Hoist Works.

Potomac Electric Power Co., Washington, D. C., a 10-ton, 21-ft. span hand power crane from the Roeper Crane & Hoist Works.

Edison Electric Illuminating Co., Boston, Mass., four 1-ton hand power cranes from the Roeper Crane & Hoist Works.

General Electric Co., Erie, Pa., a 30-ton gantry crane from the Alliance Machine Co.

Standard Gage Steel Co., Beaver Falls, Pa., a 5-ton trolley from the Cleveland Crane & Engineering Co.

Kellogg Structural Steel Co., Buffalo, a 5-ton, 70-ft. span, 3-motor overhead traveling crane from the Milwaukee Electric Crane & Mfg. Co.

The Nilco Lamp Works, Inc., St. Marys, Pa., manufacturer of electric lamps, etc., is enlarging its plant and installing additional equipment heretofore used at its Emporium, Pa., works.

The Moscow & Roaring Brook Electric Co., Moscow, Pa., recently organized, is arranging for the installation of a plant and system in Roaring Brook and Covington Townships.

The Blue Lick Coal Co., Meyersdale, Pa., recently organized, is planning for the installation of electric power and other equipment at its properties. Clarence F. and Clyde J. Rowe, both of Meyersdale, head the company.

Manual training equipment will be installed in the high school addition to be built at Church and Fairfield Streets, Ligonier, Pa., estimated to cost \$100,000. G. H. Haberen, superintendent of the Board of Education, is in charge.

The G. Klein Co., North Glenside, Montgomery County, Pa., operating a machine shop, is planning for the installation of a power lathe and other equipment.

The Davies Mine Switch Lock Co., Mayfield, Pa., recently organized with a capital of \$250,000, is perfecting plans for a factory to manufacture special equipment for coal-mining. Walter H. Kohler and Patrick F. McAndrew, Scranton, Pa., head the company.

Electrically-operated pumping equipment will be installed in connection with the new water supply system at the Lackawanna County Tuberculosis Hospital, Scranton, Pa., for which plans are being prepared by F. O. Stone, engineer, Court House, Scranton.

## Baltimore

BALTIMORE, Aug. 6.

**P**ROPERTY at Bentalou Street and Pennsylvania Avenue, Baltimore, heretofore held by the Baltimore Car Wheel Co., has been purchased by the Consolidated Gas, Electric Light & Power Co., Lexington Building, as a site for a new plant.

The Chamber of Commerce, Cumberland, Md., Franklin H. Ankeney, secretary, has received an inquiry from a company at Pittsburgh desiring to secure a local site for the construction of a plant to manufacture automobiles and parts.

The Common Council, Mocksville, N. C., will commence the installation of a municipal electric light and power plant.

Bids will be received by the Bureau of Supplies and Accounts, Navy Department, Washington, until Aug. 28, for miscellaneous machine tools for the San Diego Navy Yard, schedule 1185; until Aug. 21 for six testing generators for the Mare Island Navy Yard, schedule 1155; until Aug. 28 for 13,800 ft. steel wire rope, schedule 1187, and 12,000 sq. ft. copper wire cloth, schedule 1172, for the same yard, and until Aug. 28 for 70 electric soldering irons for the Norfolk, Va., Navy Yard, schedule 1159.

Warner, Moore & Co., Richmond, Va., are in the market for a jaw crusher to break limestone to a size of 7 in. or smaller, second-hand, with auxiliary operating equipment.

The Bureau of Yards and Docks, Navy Department, Washington, has plans nearing completion for a new generating building at the naval property, Bellevue, D. C. L. E. Gregory is chief.

The Georges Creek Clean Coal Co., Barton, Md., recently organized with a capital of \$750,000, is planning the installation of electric power equipment and mining machinery in the Georges Creek section. John Hardegan and Harry Clise head the company.

New interests headed by W. Woods White, Atlanta, Ga., have acquired the local plant of the Oliver Rim Co., manufacturer of automobile rims, for \$85,000. The company will be reorganized and operations resumed, to include the production of iron and steel castings, machine equipment, etc. Josiah T. Rose, Atlanta, will be connected with the new company.

The United Iron & Metal Co., Baltimore, has plans for the erection of a new one-story works, 42 x 214 ft., on Millington Avenue.

Bids will be received by the Chief of Air Service, War Department, Washington, until Aug. 14 for 500 compasses and other aeronautical instruments, Proposal QR 24-11.

D. C. Elphinstone, 408 Continental Building, Baltimore, machinery dealer, has inquiries out for a steam shovel, caterpillar or traction type; two 36-in. gage, saddle tank locomotives, Vulcan type preferred, second-hand, and for 20 dump cars, steel underframe, each 4 yd. capacity, 36 in. gage, 2-way, second-hand.

The Aquila Creek Quarries Co., Alexandria, Va., has acquired the former shipyard of the Marine Railway & Coal Co. and will install stone-crushing machinery transmission equipment, etc., with power house, for a new plant, estimated to cost about \$50,000.

D. T. Burch, 2043 West Broad Street, Richmond, Va., operating a machine shop, is planning the installation of a lathe, drill press and other equipment.

The Southern Public Utilities Co., Charlotte, N. C., plans to rebuild the portion of its power plant on the South Boulevard, recently destroyed by fire with loss reported at \$50,000.

The Mount Airy Granite Cutting Co., Mount Airy, N. C., is arranging for a new cutting, polishing and finishing plant to replace that recently destroyed by fire. New equipment will be installed, and the purchase of a crane is said to be under consideration.

A power house will be constructed by the Norwood Mfg. Co., Norwood, N. C., in connection with an addition to its textile mill, estimated to cost \$150,000.

The High Point Furniture Co., High Point, N. C., is in the market for electric equipment for a power house, including one 225 kva. generator, with exciter, switchboard and other auxiliary equipment; also for one 30-hp., two 20-hp., four 10-hp., ten 5-hp., and one 2-hp. motor, second-hand. M. J. Wrenn heads the company.

Manual training equipment will be installed in the high school to be erected on Camp Hill, Cumberland, Md., estimated to cost \$500,000, for which plans will soon be drawn. The Board of Education is in charge.

W. F. Bowe, Jr., 514 Broad Street, Augusta, Ga., general contractor, is in the market for concrete-mixing machinery, steam-driven, with auxiliary equipment.

L. A. MacMullen, 3504 Hermitage Road, Richmond, Va., operating a general machine works, has inquiries out for a milling machine, lathe, drill press, and other equipment.

The Common Council, Elizabeth City, N. C., has preliminary plans for the installation of a municipal electric power plant, in conjunction with waterworks system, estimated to cost \$200,000. J. J. Bray is city engineer.

Bids will be received by the General Purchasing Officer, Panama Canal, Washington, until Aug. 21, for nickel steel pinions, valves, steel rope, pipe dies, centrifugal pump, electric cable, and other equipment, circular 1549; until Aug. 14 for brass tubing, sheet copper, sheet brass, grindstones, etc., schedule 1546.

Stevens Brothers & Co., Atlanta, Ga., have inquiries out for one steel stack, about 30 in. in diameter and 50 ft. high, used.

A power house will be built in connection with the cotton mill to be erected by the Williamson Mills Co., Haw River, N. C., recently organized with a capital of \$700,000. J. O. Cobb, Durham, N. C., and W. F. Williamson, Burlington, N. C., head the company.

The Richmond Battery Co., 1839 West Broad Street, Richmond, Va., operating an electrical repair works, plans the installation of a lathe and other equipment.

The Piedmont & Northern Railway Co., Greenville, S. C., plans to rebuild the portion of its locomotive shops recently destroyed by fire with loss approximating \$25,000 including equipment.

The South Carolina Gas & Electric Co., Spartanburg, S. C., has plans for an addition to its hydroelectric power house at Gaston Shoals, S. C., estimated to cost \$150,000 with machinery.

The Wilson-Hock Co., City Point, Va., machinery dealer, has inquiries out for one centrifugal pump, direct-connected to gasoline engine, capacity 4,000,000 gal. in 24 hr.

Morton Jones & Co., 310 South Side Avenue, Asheville, N. C., recently organized, are considering plans for the establishment of a works for the manufacture of furnaces for domestic heating, furnace castings, etc., to cost about \$30,000. Morton Jones is president.

The Crewe Furniture Co., Crewe, Va., is arranging for the equipment of a local plant to manufacture kitchen cabinets.

The Hackley-Morrison Co., Inc., 1708 Lewis Street, Richmond, Va., machinery dealer, has inquiries out for one 70-hp. motor, with pulley, starting base, etc.

The Board of County Commissioners, Savannah, Ga., will take bids until Sept. 20 for one oil-burning land dredge with 1 cu. yd. bucket and 45-hp. oil-burning engine and auxiliary equipment. G. R. Butler is county clerk.

The Atlas All-Steel Truck Body Co., Baltimore, has been organized by Robert J. McNamara to manufacture all-steel automobile truck bodies. It is occupying part of the plant of McNamara Brothers Co., Westport, Baltimore, manufacturer of steel plate, tanks, boilers, etc. Production has started.

## Pittsburgh

PITTSBURGH, Aug. 6.

**T**HERE is no improvement in machine tool business in this district. The Pennsylvania Railroad, Central Region, which recently issued a list of 30 tools and subsequently increased the number to 34 is merely tabulating the bids, and there have been no awards. A large volume of business has been quoted against and many new installations are under consideration, but prospective buyers are moving slowly in the matter of purchases. Activity in heavy equipment is chiefly in filling old orders.

Manual training equipment will be installed in the new junior high school to be erected at Clearfield, Pa., estimated to cost \$110,000, for which bids will soon be called on a general contract. Howard & Thatcher, Du Bois, Pa., are architects.

The Monongahela-West Penn Public Service Co., Fairmont, W. Va., is planning for extensions in its power plants and system, and the installation of additional equipment. The company recently increased its capital from \$20,000,000 to \$30,000,000, and is arranging a preferred stock issue of \$1,000,000, a portion of the proceeds to be used for expansion.

The Progressive Ceramics Mfg. Co., Warwood, W. Va., recently organized, is planning the establishment of a plant to manufacture tile and kindred products, to include a power house. Harry Kalin and Alec Wishnew, both of Warwood, are heads.

The Electric Equipment Service Co., Pittsburgh, is having plans completed by D. A. Crone, Cameraphone Building, architect, for the erection of a one-story factory on Liberty Avenue.



The Virginia Power Co., Union Trust Building, Charleston, W. Va., has plans for an addition to its electric generating station at Cabin Creek Junction, W. Va., and the installation of additional machinery.

A merger has been arranged between the West Virginia Hardware & Supply Co., Huntington, W. Va.; Logan Hardware & Supply Co., Logan, W. Va.; Welch Hardware & Supply Co., Welch, W. Va.; and the Lexington Mine & Mill Supply Co., Lexington, Ky., under the first noted name. The new company will be capitalized at \$250,000. A tract of three acres has been acquired at Huntington and plans will be drawn at once for a new works to consolidate the different interests, estimated to cost \$100,000. C. W. Beckner, secretary, will be manager.

The Monongahela Chain & Mfg. Co., Fairmont, W. Va., is considering plans for a new factory in the vicinity of Mannington, W. Va.; Dr. F. W. Vance heads the company.

The Griffin Mfg. Co., Erie, Pa., has been incorporated under State laws with capital of \$1,500,000, to take over and expand the plant and business of the same name, specializing in the manufacture of cold rolled and turned shafting, hardware products, etc. W. A. Crawford is treasurer of the new company.

A group of electric power and transmission companies has been organized by G. C. Savering, Johnstown, Pa., to install and operate electric power plants and systems in adjacent townships. Headquarters will be established at Meadville. Mr. Savering will be treasurer of the companies.

A machine shop and parts department will be installed in the two-story automobile service building to be erected by Boag & Boag, on Third Street, Clearfield, Pa., 50 x 70 ft. Bids for the building and tools will be asked in September. Oscar Miller, Glen Richey, Pa., is architect.

Fred W. Brant, Berlin, Pa., is considering the installation of electric power and other equipment at his coal mine near Hopwood, Pa., recently acquired from James W. Feather.

A lathe, drill press, air compressor and other equipment will be installed in the new three-story automobile service building, 50 x 100 ft., to be erected by S. M. Goodloe, Williamson, W. Va., estimated to cost \$50,000, for which plans are nearing completion.

Manual training equipment will be installed in the new three-story and basement senior and junior high school, 180 x 280 ft., to be erected at Clairton, Pa., estimated to cost \$350,000, for which a general contract will soon be awarded. Charles W. Bates, 77 Twelfth Street, Wheeling, W. Va., is architect.

The Bedford Rustic Furniture Co., Bedford, Pa., is considering the erection of a power house in connection with a proposed two-story plant to cost \$75,000. L. F. Hoffman is head.

## Buffalo

BUFFALO, Aug. 6.

PLANS have been filed by the Atlas Steel Casting Co., 1965 Elmwood Avenue, Buffalo, for a new one-story foundry.

George L. Waitt, Buffalo, has acquired a one-story building at 492 Kensington Avenue, Buffalo, for a new plant to manufacture metal devices for holding cores of molds in place and other mechanical products.

The Barkay Co., Inc., 24 Institute Street, Jamestown, N. Y., manufacturer of brass and bronze castings, is planning for extensions and the installation of foundry equipment, furnaces, polishing equipment, etc.

The Empire Gypsum Co., Cutler Building, Rochester, N. Y., has tentative plans for rebuilding the portion of its plant at Garbutt, N. Y., destroyed by fire July 21, with loss estimated at \$25,000 including equipment. The power house, also, was damaged.

Ovens, power equipment, conveying and other machinery will be installed in the two-story addition to be erected by the Egloff Bakery, Inc., 147 Genesee Street, Buffalo, 96 x 180 ft. Improvements will also be made in the present plant. L. S. Beardsley, 116 West Thirty-ninth Street, New York, is architect.

The J. N. K. Machine Corporation, 108 Harrison Street, Jamestown, N. Y., operating a general machine works, is planning for expansion and the installation of lathes, drill press, milling machine and other equipment. E. R. Swanson is in charge.

The Pennsylvania Railroad Co., Pennsylvania Terminal, New York, is planning for additions to its locomotive shops at Olean, N. Y., to replace the portion of the works destroyed by fire several months ago. The expansion will include a machine shop, erecting shop, power equipment and ash-handling apparatus, estimated to cost \$60,000. F. P. Huston is master mechanic at the shops.

Bids will be received by the Board of Trustees, Palmyra, N. Y., until Aug. 20 for pumping machinery and auxiliary equipment for the municipal waterworks. Hopkins & Field, 349 Cutler Building, Rochester, N. Y., are engineers. Sanford M. Young is clerk of the board.

The Rathbun Mfg. Co., Jamestown, N. Y., manufacturer of radio and electrical apparatus, is in the market for a used No. 0 Brown & Sharpe automatic screw machine.

The L. Parker Co., Centerfield, N. Y., will install machine tools, bench tools, etc., to replace equipment in its general repair works recently destroyed by fire.

The Kroehler Mfg. Co., Binghamton, N. Y., manufacturer of furniture, with headquarters at 1319 South Michigan Avenue, Chicago, has tentative plans for a new factory at San Francisco for Pacific Coast trade, estimated to cost \$800,000. Work will commence early next year. P. E. Kroehler is president.

Manual training equipment will be installed in the new high school to be erected at Eastwood, N. Y., estimated to cost \$150,000, for which bids will be received on a general contract until Aug. 25. LaVaute & Mulrane, 309 Herald Building, Syracuse, N. Y., are architects.

Zube & Kahra, 908 East Water Street, Syracuse, N. Y., operating a general machine repair shop, are planning the installation of an 18-in. lathe and other equipment.

Electric power equipment, conveying and other machinery will be installed in the new three-story bottling works, 60 x 120 ft., to be constructed by the Bashford Cider & Vinegar Co., 143 Water Street, Lyons, N. Y., estimated to cost \$70,000.

The Radiant Floor Waxer-Polisher Co., 215 Victoria Street, Toronto, is contemplating the establishment of a plant in Buffalo to manufacture its product for the American market and desires to hear from American manufacturers who make a specialty of small light stampings.

## Detroit

DETROIT, Aug. 6.

PLANS have been filed by the Michigan Copper & Brass Co., 3351 West Jefferson Street, Detroit, for the erection of a new two-story factory, estimated to cost \$40,000.

Manual training equipment will be installed in the high school to be erected at Galien, Mich., estimated to cost \$95,000. D. H. Allen, president of the Township Board of Education, is in charge.

The Conant & Donaldson Co., Kalamazoo, Mich., recently organized with a capital of \$50,000, is arranging for the establishment of a plant to manufacture tools and other equipment. Emmett McCarthy heads the company.

The Precision Speedometer Co., 9 West Woodbridge Street, Detroit, is planning the installation of additional equipment in its machine shop, particularly for precision work.

The Kirsch Mfg. Co., North Prospect Street, Sturgis, Mich., manufacturer of metal curtain poles, has tentative plans for the erection of a three-story addition in the fall. C. W. Kirsch is president and general manager.

The Detroit & Ironton Railway, Detroit, recently acquired by Henry Ford to be operated in conjunction with his Detroit, Toledo & Ironton Railway system, will be electrified from the River Rouge plant to Flat Rock, where connection will be made with the last noted railroad, a distance of 13 miles. Electric generating, power and other equipment will be installed, estimated to cost \$5,000,000.

The Besser Mfg. Co., Alpena, Mich., manufacturer of concrete-mixing machinery, parts, etc., has commenced the erection of a one-story addition, 40x200 ft.

The R. B. Collis Sprayer Co., 190 Territorial Avenue, Benton Harbor, Mich., manufacturer of spraying equipment, etc., is planning the erection of a new two-story factory, 50x125 ft., estimated to cost \$25,000.

The Hudson Motor Co., Jefferson Avenue, Detroit, is having plans drawn for a one-story addition, 65x275 ft. Albert Kahn, 1000 Marquette Building, is architect.

The Fisher Body Corporation, General Motors Building, Detroit, has plans for a new one-story power house at its plant on Trombley Street, to cost about \$50,000.

The Detroit Auto Specialties Co., Detroit, a subsidiary of the Hupp Motor Car Corporation, manufacturer of automobile fenders, hoods and other metal products, has plans for a new factory in the rear of the works of the parent company, Mt. Elliot Avenue and Dunn Road, to be one-story, 120x500 ft., estimated to cost \$350,000. It will be ready about the end of the year, at which time the present plant will be removed to this location and additional machinery installed.

The Gray Motor Corporation, Detroit, has preliminary plans for additions, for assembling and other work, estimated

to cost \$200,000. It also purposes to build a number of assembling plants in other cities.

The Cooper Coal Co., Saginaw, Mich., recently organized with a capital of \$450,000, is planning the installation of electric power and other equipment at its coal mines in Kochville and Tittabawassee townships. Otto L. Dittmar is president and William E. Thompson, treasurer, both of Saginaw.

## Cleveland

CLEVELAND, Aug. 6.

**T**HE machinery market is extremely dull. Not only were aggregate sales very light the past week, but little new inquiry came out. The Nickel Plate Railroad has placed orders for nine tool grinders but has not yet acted on its original list of about 15 machines. The purchase by the Pebbles Engineering Co., Newton Falls, Ohio, referred to last week, aggregated seven tools, mostly heavy duty drilling machines. It is expected to buy some additional equipment when its new factory buildings are completed.

The Ohio Trent Coal, Coke & Amalung Co., Toledo, Ohio, recently organized, has acquired a site on which it plans to shortly begin the erection of a plant for the manufacture of fuel.

The Hydro Forge Co., which recently acquired the plant of the Louisville Sheet Steel Co., Louisville, Ohio, advises that it will manufacture medium heavy forgings and will begin operation about Feb. 1, 1924. H. K. Strickler and others are interested. The company's office is in the Eagle Building, Alliance, Ohio.

The Eaton Axle & Spring Co., Cleveland, has purchased the machinery, inventory, patents, etc., of the Cox Brothers Mfg. Co., Inc., manufacturer of automobile bumpers, with plants in Cleveland and Albany, N. Y. Both William G. Cox and Theodore M. Cox will become affiliated with the Eaton Co., the former in Cleveland, in charge of sales, and the latter in Albany, in charge of production.

The Van Dorn Iron Works Co., Cleveland, has been awarded contract for 700 steel cells for the County jail at Los Angeles, Cal., amounting to approximately \$600,000.

The Packard Electric Co., Warren, Ohio, is having plans prepared for a three-story addition, 85 x 200-ft.

The Fisher Body Corporation, Cleveland, is planning the erection of a one-story factory, 120 x 240-ft.

The Wayman Electric & Mfg. Co., East Palestine, Ohio, recently incorporated with capital stock of \$200,000, is a reorganization of a former company and will erect a factory. It is in the market for punch presses, small sensitive drills and tapping machines.

## Chicago

CHICAGO, Aug. 6.

**R**AILROAD business continues to hold the center of the stage. The Illinois Central is expected to close against a few remaining inquiries this week and is also preparing an extensive new list. The Elgin, Joliet & Eastern will probably finally place orders against its inquiry of long standing this week or next. The Chicago, Burlington & Quincy, according to latest advices, will take action on its list within the next fortnight. The Chicago & North Western has closed against a small inquiry for about 10 items, which was published in THE IRON AGE of June 28. Industrial buying is at a low ebb and the only transaction of any consequence which is reported is the purchase of a 3½-ft. radial drill, a single spindle high speed sensitive drill, a No. 4 plain milling machine and a No. 2 universal milling machine by the Yellow Sleeve Valve Co., Moline, Ill.

Villisca, Iowa, has voted for the erection of a municipal electric light plant to cost \$75,000.

The Central Brake Shoe & Foundry Co., a new organization, has about half completed a plant at 5330-42 West Sixty-sixth Street, Chicago, to cost \$100,000. The company will manufacture brake shoes and will do a general foundry business. Frank Van Inwagen is president.

The Hansell-Elcock Co., structural steel fabricator, Archer and Normal Avenues, Chicago, has acquired a leasehold to a triangular tract of 12 acres bounded by Thirty-first Street on the north, California Avenue on the west and the Sani-

tary District Canal on the southeast. It will be improved as the development of the company's business requires.

The Town Council, Barron, Minn., has voted bonds of \$15,000 to start the construction of a municipal hydro-electric plant.

J. D. Wallace & Co., manufacturers of wood planing machines, 1401 West Jackson Boulevard, Chicago, have purchased a site, 112 x 266 ft., on California Avenue, extending from the northwest corner of Adams Street to the southwest corner of Wilcox Street, and will improve it with a factory.

Work has started on the construction of a factory, 100 x 300 ft., at Walnut Street and the Pennsylvania Railroad, Greenwood, Ind., to be occupied by the Indianapolis Pump & Tube Co. The company now has a plant in Indianapolis, but all equipment will be removed to the new location. Electric heaters and other electrical devices will be manufactured.

The Bastian-Blessing Co., 125 West Austin Avenue, Chicago, has purchased a four-story and basement building at the northwest corner of Ontario Street and Fairbanks Court from Burke & James, Inc. The Bastian-Blessing Co. manufactures soda fountains.

The Henry T. Adams Mfg. Co., manufacturer of loose-leaf specialties, 6796 South Chicago Avenue, Chicago, has let contract for a one and two-story factory, 8561-69 South Chicago Avenue, to cost \$50,000.

S. W. Wurm, 7700 South Paulina Street, Chicago, has let contract for a one-story wagon shop, 25 x 48 ft., at 5845 South Ashland Ave., to cost \$12,000.

The Stewart-Warner Speedometer Co., 1828-58 George Street, Chicago, has let contract for a six-story factory addition, 141 x 215 ft., to cost \$700,000.

The Elgin, Joliet & Eastern Railroad is taking bids for a one-story car repair shop at East Joliet, Ill.

The Board of Education, Chicago, will install a vocational department in the new Theodore Roosevelt high school, estimated to cost \$4,000,000, for which plans are being drawn. It will consist of two machine and automotive shops, one sheet-metal working shop, three woodworking and two electric equipment shops. John C. Christensen, officer of the Board, is architect.

The Lubrite Refining Co., Arcade Building, St. Louis, manufacturer of refined oils, is planning the erection of a one and two-story refinery at East St. Louis, Ill., estimated to cost \$400,000 with machinery.

The Domestic and Foreign Commerce Department, Chicago Association of Commerce, 10 South La Salle Street, is in receipt of an inquiry from an engineering company at Toronto, Ont., desiring to get in touch with a concern at Chicago or vicinity, in position to manufacture a motorless electric refrigerator.

S. M. Seator, 19 South La Salle Street, Chicago, architect, has completed plans for a two-story and basement factory on Blackhawk Street to manufacture paper boxes and containers, estimated to cost \$90,000 with machinery. The owner's name will be announced later.

The Clinton Machinery Co., 128 South Clinton Street, Chicago, is planning for the installation of a new punch press and other equipment.

The Northwestern-Davenport Cement Block Co., 1735 Davis Street, Davenport, Iowa, has plans for a new two-story factory, 70 x 75 ft. A. H. Ebeling, 818 Kahl Building, is architect.

The Calumet Steel Co., 208 South La Salle Street, Chicago, will take bids at once for a new one-story crane building, 75 x 450 ft., at its Chicago Heights plant. J. H. Porter is president.

The Adams Co., Dubuque, Iowa, operating a machine shop, is planning for the installation of a slitting shear and other equipment.

Fritz Work, 257 Fifth Street, La Salle, Ill., is organizing a company to build a plant for the manufacture of cement and concrete blocks, for which plans will be prepared at once.

Manual training equipment will be installed in the new high school to be erected at Clatonia, Neb., estimated to cost \$90,000, for which excavations will soon commence. E. J. Chittenden, secretary Board of Education, is in charge.

A. E. Hagenboeck, 115 Twenty-first Street, Moline, Ill., has awarded a general contract to Axel Carlson, People's Bank Building, for a new one-story foundry, 40 x 95 ft., at Twenty-ninth Street and Second Avenue.

Manual training equipment will be installed in the three-story and basement senior and junior high school to be erected at Wymore, Neb., estimated to cost \$200,000, for which bids will probably be taken in the fall. Fiske & McGinnis, Bankers' Life Building, Lincoln, Neb., are architects.



## Milwaukee

MILWAUKEE, Aug. 6.

**B**UILDERS of machine tools report no perceptible change in market conditions. Inquiry has improved slightly, giving hope of a betterment in demand, but orders placed the past week form an aggregate approximating that of a weekly average in July. Production is fairly well sustained, however. The fact that there has been no intermission of old orders, and no cancellations, is regarded as a favorable sign. Milling machine demand is quiet, with scattering sales to automotive industries and railroads, generally in single tools.

The Great Lakes Boatbuilding Corporation, 333 Becher Street, Milwaukee, has increased its authorized capitalization from \$200,000 to \$750,000 to finance enlargement of plant and production for quantity output of a standardized 26-ft. motor yacht under an agreement with the Packard Motor Car Co., Detroit, which will supply the standard Packard power units and market the craft. Definite details of the enlargement program are now being completed. William C. Morehead is president and general manager.

The Charles Schott Machine Co., 1281 Twenty-eighth Street, Milwaukee, is in the market for a small list of miscellaneous equipment for a one-story machine shop addition, 43 x 60 ft.

The Milwaukee Coke & Gas Co., Milwaukee, intends to replace at once the benzol plant of its Greenfield Avenue-Mitchell Street works, which was almost totally destroyed by explosion and fire on Aug. 1, with a loss estimated at nearly \$250,000. J. W. Schaeffer is president and general manager.

The Common Council, Marshfield, Wis., has contracted with Layne & Bowler, Chicago and Memphis, for the construction and equipment of additions and changes in the municipal waterworks plant. The contract embraces every part of the work, from drilling new wells to supplying the requisite gallonage at proper pressure to mains, under bond equalling the contract price. Work is required to start by Aug. 13.

The Green Bay Newspaper Co., 315 Cherry Street, Green Bay, Wis., publisher of the *Daily Press-Gazette*, has let the general contract to the Wisconsin Engineering & Construction Co., Wausau, Wis., for a new plant, two stories and basement, 58 x 114 ft., estimated to cost \$125,000 with equipment. The architects are Foeller, Schober & Stephenson, local.

The Wisconsin Parts Co., Oshkosh, Wis., manufacturer of heavy duty front and rear axles, is enlarging its plant and buying considerable new machinery, having acquired by purchase the entire motor truck axle business of the Savage Arms Corporation, Sharon, Pa., and Utica, N. Y., including the entire inventory, dies, tools, patterns, patents and designs for front and rear axles of the double reduction type for one to five-ton vehicles. W. F. Rockwell is president and general manager of the Oshkosh company.

The Grimm Aluminum Castings Co., Manitowoc, Wis., is taking bids through W. J. Raeuber, local architect, for a brick and steel shop, with steel sidewall and monitor shaft, 60 x 120 ft. The investment will be about \$50,000.

Bids are being taken by Harry Boyer, city clerk, Black River Falls, Wis., until Aug. 28, for furnishing and erecting complete a 150,000-gal. steel tank mounted on a 50-ft. steel tower for the municipal waterworks system. The engineer is W. G. Kirchhoffer, Madison, Wis.

The Brainerd Foundry Co., has been organized at Brainerd, Minn., by E. O. Webb, Clyde E. Parker and Fred E. Kinsmiller to manufacture gray iron castings. A site has been purchased and contracts will be let at once for the erection of a shop, 60 x 120 ft., for which equipment is being purchased.

The Common Council of Barron, Wis., has definitely decided to build a hydroelectric generating plant costing about \$35,000 for the first unit, at the Taylor dam, owned jointly by the municipality and the estate of C. S. Taylor. Plans are now in process and bids will be taken about Sept. 1.

The Milwaukee Boiled Ham Co., 901 Holton Street, Milwaukee, is in the market for boilers, motors, cookers and other specialized equipment for a two-story addition, 71 x 104 ft., designed by Leiser & Holst, architects, 105 Wells Street, local. John J. Czala is president and general manager. The work will cost about \$75,000 complete.

Jim's Repair Shop, Milwaukee, will take bids Aug. 27 for a one-story brick and concrete machine and repair shop, 49 x 103 ft., adjacent to the present shop at 1524 Galena Street. Frank Howend, 67 Wisconsin Street, is architect.

M. E. McCaffrey, secretary Board of Regents, University of Wisconsin, Madison, is taking bids until Aug. 20 for a

complete water softener installation and the refrigeration unit for the new Wisconsin General Hospital being erected at a cost of \$800,000. Arthur Peabody, Madison, is State architect.

The Milwaukee Electric Railway & Light Co., Public Service Building, is taking bids through Fred H. Luber, designing architect, for a boiler house addition, 50 x 71 ft., to the Oneida Street steam generating plant, and for a two-story brick and concrete substation, 35 x 65 ft., at North Milwaukee, Wis.

Arthur L. Seldenschwartz, architect, 290 Third Street, Milwaukee, is completing plans for a brick and steel addition, 50 x 75 ft., to a local foundry, the identity of which is withheld for the present.

The Board of Education, Burlington, Wis., has engaged Oppenhamer & Obel, architects, Wausau and Green Bay, Wis., to design the new \$300,000 vocational training institute, 185 x 245 ft., two stories and basement. Bids will be taken early in September by Nettie E. Karcher, secretary of the board.

## Cincinnati

CINCINNATI, Aug. 6.

**W**HILE orders are not heavy, reports from manufacturers during the week indicate that a slight improvement is evident in the machine tool field. Railroad and automotive buying has been fair, and while most of the automotive buying has been done quietly a substantial volume of orders for miscellaneous machines has been booked. Inquiries are more numerous, and while generally confined to one and two machines, the chances of orders developing from a good percentage are very good.

There was no heavy buying during the week, although the Central Vermont is reported to have purchased a number of tools, including a planer with a Cincinnati manufacturer. The Otis Elevator Co. and the Ironton Engine Co. were also purchasers. A very much improved demand for used machinery is reported by dealers, and orders booked the past 10 days were far in excess of those for the previous three weeks.

The Columbus Steam Pump Works, 83-85 West Broad Street, Columbus, Ohio, has awarded contract to the Austin Co. for a new foundry. Cranes and other equipment will be installed.

The Washington Motor Co., Eaton, Ohio, has commenced the erection of its new plant at Middletown, Ohio, and on its completion the equipment of the present works will be moved to that city. The new plant will be 68 x 200 ft. and will be completed in about three months.

The Gem City Pattern Works, Dayton, Ohio, will shortly commence the erection of a one-story concrete building, 40 x 60 ft., to take care of increasing business. Additional wood-working machinery has been purchased. H. J. Kastner is general manager.

Reports current to the effect that the plant of the American Blower Co. would be moved from Detroit to Cincinnati have not been fully confirmed. The company several years ago purchased the plant of the Lane & Bodley Co. at Bond Hill, and it is expected that it will shortly be placed in operation. Officials state that the extent of the company's operations in Cincinnati in the future are contingent on a number of problems, which have not yet been completely worked out.

## Indiana

INDIANAPOLIS, Aug. 6.

Fire, July 26, destroyed the wire-drawing building and adjoining sections at the plant of the Kokomo Steel & Wire Co., Kokomo, Ind., with loss estimated at \$75,000, including equipment. It is planned to rebuild.

The American High Speed Chain Co., Illinois and South Streets, Indianapolis, has leased property at 227 East South Street, heretofore occupied by the Prest-O-Lite Co. The structure will be remodeled and the present works removed to this location.

Lockwood, Greene & Co., 38 South Dearborn Street, Chicago, engineers, have prepared plans for a one-story power house in conjunction with new dye works at Fort Wayne, Ind., estimated to cost \$60,000, for which the owner's name will be announced in the near future.

Bids will soon be asked by the Whiting Foundry Equipment Co., Whiting, Ind., for a one-story addition, estimated to cost \$40,000 with equipment. L. G. Hallberg, 116 South Michigan Avenue, Chicago, is engineer.

The Standard Oil Co. of Indiana, Indianapolis, has arranged an appropriation of \$1,000,000 for extensions at its refinery at Whiting, Ind. Initial work is under way on two plant units to cost \$350,000, and other units to cost a like amount will be built in the near future. Additions will be made in the paraffin department, to cost \$250,000 with equipment, and extensions made in the white oil department to double the present refining capacity.

The Zero Ice & Fuel Co., Indianapolis, is planning the installation of electrically-operated ice-manufacturing equipment at its plant at Cornell Avenue and Twenty-seventh Street.

Manual training equipment will be installed in the high school to be erected at Milton, Ind., estimated to cost \$100,000, for which ground will be broken at once. The Board of Education is in charge.

The Interstate Public Service Co., Bloomington, Ind., is disposing of a bond issue of \$7,192,000, a portion of the proceeds to be used for extensions and improvements. Harry Reid is president.

The Indianapolis Light & Heat Co., Indianapolis, will expend about \$1,500,000 for extensions in plants and system during the present year, inclusive of construction now in progress. A new turbo-generator of 12,000 kva. capacity, with auxiliary machinery, will be installed at the power plant on Kentucky Avenue, to be ready for service by the end of the year. A new power house will be located in the Broad Ripple section. C. C. Perry is president.

A machine shop will be installed in the three-story service building at 125 North East Street, Indianapolis, to be established by the Radio Taxi Co. A lease has been taken on the property, and early occupancy is being arranged.

The Board of Works, Evansville, Ind., plans the installation of electrically-operated pumping machinery in connection with extensions in the municipal waterworks estimated to cost \$270,000, for which bonds are being issued.

## The Gulf States

BIRMINGHAM, Aug. 6.

**W**ILLIAM A. BURR, San Antonio, Tex., is organizing a company to construct and operate a plant for the production of lead pipe, sheet lead, etc., estimated to cost \$45,000.

The Mississippi Cotton Oil Co., Jackson, Miss., has been chartered under Delaware laws with capital of \$100,000 to take over the plant of the company of the same name, recently acquired by J. W. Tuberville and George W. Covington, who will head the new organization. Plans are being perfected for extensions and the installation of additional machinery.

Sutton, Steele & Sutton, Inc., 4215 Gurley Street, Dallas, Tex., manufacturer of ore and concentrating machinery, will commence the erection of a new foundry for the production of fine carbon and alloy steel castings, estimated to cost \$250,000 including machinery. Contract for electric furnaces has been let to the Pittsburgh Electric Furnace Corporation, Pittsburgh.

The Saline Coal Co., Texarkana, Ark., recently organized with a capital of \$90,000, is planning the installation of electric power and other equipment at Grand Saline, Tex. J. F. O'Neal is president and general manager.

The Cohoon Brothers Co., Orlando, Fla., operating a general machine shop, is planning for the installation of a lathe, bench tools, and other equipment.

The Ferris Brick Co., Ferris, Tex., has been incorporated with a capital of \$500,000 to take over and merge the businesses of several pressed brick companies of Ferris. Plans are under consideration for extensions in a number of the plants and the installation of power and other equipment. W. E. Weatherford is president of the consolidated company and J. A. Carpenter, secretary and treasurer.

Work will commence on a new building at 2500-2 Commerce Street, East Dallas, Tex., to cost about \$25,000, replacing the portion of the plant of the Texas Wheel & Body Co., destroyed by fire several weeks ago.

The Alabama Power Co., Birmingham, is perfecting plans for a new hydroelectric power station at Cherokee Bluffs, Ala., estimated to cost \$10,000,000, including steel tower transmission system. A railroad will be built from Asbury, Ala., to the plant site, seven miles.

J. F. Scofield, Berry, Ala., is planning the establishment of a factory for clock assembling. It is proposed to purchase parts from different manufacturers and inquiries are being made for producers of such precision equipment, including shafts, gears, levers, etc.

Manual training equipment will be installed in the new high school to be erected at Hull, Tex., estimated to cost \$100,000, for which bids are being asked on a general contract. Alfred C. Flinn, Coggan Building, Houston, Tex., is architect. J. W. Canter, secretary of the school board, Daisetta, Tex., is in charge.

Four chain ovens, power equipment, conveying and other machinery will be installed in the new seven-story plant to be erected by the Brown Cracker & Candy Co., Dallas, Tex., to cost \$275,000, for which a general contract has been let to the Hughes-O'Rourke Construction Co., Dallas. J. L. Brown is president.

The Landa Milling Co., New Braunfels, Tex., recently organized with a capital of \$1,500,000, has taken over the local electric light and power house and plans extensions and the installation of additional equipment. It will also acquire a local oil mill and stone crushing plant, both of which will be enlarged.

The Rosenthal Packing Co., Galveston, Tex., is planning for extensions for the installation of a cold storage and refrigerating department. The machinery installation will approximate \$25,000. Stowe & Stowe, Galveston, are architects.

The Arab Gasoline Corporation, Eastland, Tex., will commence the construction of its new gasoline refinery and will expend about \$1,000,000, for the refinery and a carbon black manufacturing works, on adjoining site. A list of machinery has been arranged. Samuel Butler is president and Horace Butler, vice-president and general manager.

The Common Council, Boynton, Fla., is contemplating the installation of electrically-operated pumping machinery in connection with a new waterworks plant, to cost \$75,000.

The Common Council, Edgewood, Tex., has arranged a bond issue of \$55,000, for the installation of a municipal electric light and power plant, in conjunction with a waterworks station.

The Southern Cartridge Co., Houston, Tex., recently organized to build a plant, has arranged a fund of \$200,000 for the initial works. The main building will be one-story, 80 x 365 ft., and with adjoining structures will be equipped for a daily output of 60,000 gun shells, 12 to 20 gage, and 125,000 cartridges, 12 to 38 caliber. W. C. Nunn and R. C. Fulbright head the company.

The Galveston, Houston & Henderson Railroad Co., Galveston, Tex., will install an air-lift pumping plant, with air compressor, etc., at its new water station at League City, Tex., to develop an output of 400,000 gal. per day.

H. W. Dexter, Bisbee Building, Jacksonville, Fla., machinery dealer, has inquiries out for a drill press, crank shaper and other equipment.

Joseph E. Decker & Sons, Dallas, Tex., contemplate erection of an ice and cold storage plant to cost \$45,000.

The Deal-Parsons Planing Mill Co. Tuscaloosa, Ala., has acquired the plant of the Modern Lumber Co., Northport, Ala. The new owner will make extensions in the mill and power house and install additional equipment estimated to cost \$75,000.

The Marland Refining Co., Ponca City, Okla., has acquired property at Texas City, Tex., for the installation of a new oil storage and distributing plant to cost \$100,000 with equipment.

The Florida Vegetable Corporation, Sanford, Fla., has plans for a new refrigerating and precooking plant to cost \$65,000. All machinery will be electrically-operated.

W. H. McGrath, Corsicana, Tex., engineer, is organizing a company to build an ice-manufacturing plant to cost \$100,000, including equipment.

## The Central South

ST. LOUIS, Aug. 6.

**P**LANs are being considered by the Smith & Davis Mfg. Co., 1923 Locust Street, St. Louis, manufacturer of iron and brass bedsteads, springs, etc., for a new one and two-story factory, estimated to cost \$350,000 with machinery.

Powell & Wasson, Inc., Muskogee, Okla., has preliminary plans for a new gasoline refinery to cost approximately \$100,000. The company recently increased its capital from \$50,000 to \$300,000.

Manual training equipment will be installed in the three-story high school to be erected at Dexter, Mo., estimated to cost \$100,000, for which bids will be taken at once on a general contract. H. H. Hohenschild, Odd Fellows Building, St. Louis, is architect.

The Holston Quarry Co., Straw Plains, Tenn., has inquiries out for a steam shovel, railroad type, with 2½ yd.



capacity bucket, Marion or Bucyrus type preferred, second-hand.

Plans are being considered by the Lebanon Woolen Mills, Lebanon, Tenn., for a power house, in connection with its proposed addition, to cost \$110,000. D. W. Southgate, 150 Fourth Avenue, Nashville, Tenn., is architect.

The Kansas City Southern Railroad Co., Kansas City, Mo., has authorized plans for a new one-story car repair shop at Shreveport, La., to replace the portion of the plant recently destroyed by fire. It will cost about \$175,000 with equipment.

The American Car Co., 1518 South Vandeventer Street, St. Louis, a subsidiary of the J. G. Brill Co., Philadelphia, has awarded contract to Amber & Zimmerman, 1228 Pine Street, for a one and two-story addition, 40x80 ft., to cost \$45,000.

The Wood & Lane Co., 915 Olive Street, St. Louis, has inquiries out for a rotary converter, 300 to 500 kw. capacity, 600 volts; also for one short wall mining machine, Goodman type, with 6 ft. cutter bar, electrically-operated.

The Moline Implement Co., Lyons, Kan., is planning for the installation of a lathe and other equipment. W. J. Myers is head.

The Stockton Light & Power Co., Stockton, Mo., has rejected all bids received for the construction of a hydroelectric power plant on the Sac River, estimated to cost \$75,000. Russell & Axon, 404 McDaniel Building, Springfield, Mo., engineers, will prepare revised plans.

The M-B Automotive Corporation, Jacksonville, Tenn., recently organized with a capital of \$10,000,000, has acquired a portion of the Old Hickory powder works of the Government, near Nashville, for the establishment of a new plant to manufacture motor trucks, buses, etc. The machinery installation is estimated to cost \$100,000. Guy Hamilton is vice-president, and Martin Soule, secretary, both of Jacksonville.

The Temple Cotton Oil Co., Little Rock, Ark., has acquired the local plant of the American Cotton Oil Co. Plans are being considered for extensions and the installation of additional equipment.

The N. O. Nelson Mfg. Co., Twentieth and Chestnut Streets, St. Louis, manufacturer of steam fittings, plumbing equipment, etc., has awarded general contract to the Widmer Engineering Co., Laclede Gas Building, for a new one-story plant, 60 x 295 ft., estimated to cost \$50,000.

The Chicago & Western Coal Products Corporation, Witteville, Okla., operating the Columbia Coal Mining Co., plans the installation of additional equipment, including electric power apparatus. A preferred stock issue of \$260,000 is being sold to provide for the expansion.

The Duncan Machinery Co., Dempster Building, Knoxville, Tenn., machinery dealer, is in the market for equipment for a woodworking plant, including planer, matcher, rip saw and miscellaneous tools.

Manual training equipment will be installed in the new high school to be erected at Burlingame, Kan., estimated to cost \$100,000. W. E. Glover, Stormont Building, Topeka, Kan., is architect.

The Friderichsen Floor & Wall Tile Co., Independence, Mo., will make extensions in its plant and install additional machinery at a cost of \$30,000.

The Southland Portland Cement Co., Nashville, Tenn., recently incorporated with a capital of \$1,000,000, has preliminary plans for a new works in the vicinity of Crab Orchard, Tenn., to cost about \$500,000. It will include a power plant. Benjamin L. Ireland, Nashville, and Louis H. Wright, Indianapolis, head the company.

The Oklahoma Pipe Line Co., Oklahoma City, Okla., is planning for the erection of an electrically-operated plant in connection with a pipe line from the Hewitt oil fields.

The Owensboro Clay Products Co., Owensboro, Ky., recently formed with a capital of \$100,000, will commence the erection of a new plant at Bon Harbor, for the manufacture of tile, building blocks, etc., to cost about \$50,000 with machinery. A power house is planned. Benjamin F. Medley and John A. Bolger are heads.

The Red Star Mill & Elevator Co., Wichita, Kan., will build a new one-story and basement power house at 1901 North Emporia Street, estimated to cost \$30,000.

Power equipment, transmission, conveying and other machinery will be installed in the series of warehouses to be built by the Dark Tobacco Growers' Cooperative Association, Owensboro, Ky., in Kentucky and Tennessee, to cost collectively about \$1,000,000. Manley & Young, Knoxville, Tenn., are architects and engineers.

The Lion Oil & Refining Co., El Dorado, Ark., has construction in progress on a new refinery to cost \$2,500,000 with machinery. F. H. Thwing is president, and V. H. Smith, vice-president and general manager.

Mansfield & Sons, East Central Street, Arkansas City, Kan., operating a general machine works, will install additional equipment, including a lathe, drill press, transmission equipment, etc.

The Tennessee Electric Power Co., Nashville, Tenn., will commence an expansion program to include the installation of a hydroelectric power plant addition at Great Falls, Tenn.; a new steam-operated generating plant at Hales Bar, Tennessee River, and an addition to the steam-operated generating plant at Nashville.

George H. Durant, Union Star, Mo., is planning to rebuild the portion of his local power plant recently destroyed by fire with loss of \$25,000.

The Illinois Central Railroad Co., Chicago, will commence the erection of an addition to its locomotive and car repair shops at Jackson, Tenn., to cost \$200,000 with equipment.

## The Pacific Coast

SAN FRANCISCO, Aug. 1.

PLANS are being prepared by the Atchison, Topeka & Santa Fe Railway Co., Kerckhoff Building, Los Angeles, for the erection of two new shop units at its repair works at San Bernardino, Cal., estimated to cost \$1,200,000 with equipment. The company is perfecting plans for rebuilding the portion of its shops at Barstow, Cal., recently destroyed by fire with loss approximating \$100,000, including machinery.

The Independent Paper Products Co., Fresno, Cal., is having plans drawn for a one-story factory on Butler Avenue, estimated to cost \$50,000 with equipment. Leland Rosener, Insurance Exchange Building, San Francisco, is architect. All machinery will be electrically operated.

The Roch Harbor Lime Co., Bellingham, Wash., is planning to rebuild its plant and power house destroyed by fire July 28, with loss estimated at \$900,000 including machinery.

The Puget Sound Light & Power Co., Seattle, has plans for the construction of a new power house at Tenino, Wash.

The Jacobson-Reid Lumber Co., Rainier, Ore., is planning the erection of a new mill and power house to cost \$80,000.

C. T. Richardson, 1022 East Gutierrez Street, Santa Barbara, Cal., will build a new one-story machine shop at 423 North Salspuedes Street.

The Sacramento Pipe Works, Seventh and R Streets, Sacramento, Cal., manufacturer of cast and wrought iron pipe, is contemplating the erection of a new one-story plant, 100 x 150 ft., estimated to cost \$50,000 with equipment.

The California-Hawaiian Sugar Refining Co., Los Angeles, has selected a site on Terminal Island, Wilmington district, for a new refinery to cost in excess of \$300,000 with machinery. The plant will include a power house and machine shop.

The Brattle Brothers Mill Co., Ridgefield, Wash., is planning to rebuild its planing mill and power plant destroyed by fire July 26, with loss estimated at \$100,000 including equipment.

The Southern California Edison Co., Los Angeles, is arranging for an increase in capital from \$100,000,000 to \$250,000,000. At least \$80,000,000 of the proceeds will be used for extensions and improvements, including the construction of additional hydroelectric power plants and steel tower transmission lines.

The Federal Refrigerating Co., Los Angeles, is having plans prepared for a new ice-manufacturing and refrigerating plant at Downey Road and District Avenue, 200 x 400 ft., with power plant, estimated to cost \$250,000 including machinery. The company has a tract of 16 acres and purposes to build 10 complete operating units of the size noted, with central electric power plant, to cost \$2,000,000. Frank D. Chase, Inc., Los Angeles, is engineer.

The Pacific Gas & Electric Co., 445 Sutter Street, San Francisco, is completing plans for a one-story, steam-operated electric power plant on Stevenson Street, estimated to cost \$250,000 with equipment. It will also erect a new power house on East Fiftieth Avenue, Oakland, Cal., to cost \$50,000.

Manual training equipment will be installed in the new junior high school to be erected in the Boyle Heights section, Los Angeles, estimated to cost \$300,000. Edgar H. Cline, 743 North Wilton Place, is architect.

W. H. Woodfield, Jr., 30 Hemway Terrace, San Francisco, has plans for a one-story foundry and machine shop at 275 North Folsom Street, estimated to cost \$20,000 exclusive of equipment. James H. Hjul, 1342 Mission Street, is engineer.

The Hitchcock Tractor Co., Richmond, Cal., manufacturer of farm tractors, etc., has acquired property at Oakland, Cal., and will remove its plant to this location. The works will be extended and additional equipment installed.

# Current Metal Prices

On Small Lots, Delivered from Merchants' Stocks, New York City

The following quotations are made by New York City warehouses.

As there are many consumers whose requirements are not sufficiently heavy to warrant their placing orders with manufacturers for shipments in carload lots from mills, these prices are given for their convenience.

On a number of items the base price only is given, it being impossible to name every size.

The wholesale prices at which large lots are sold by manufacturers for direct shipment from mills are given in the market reports appearing in a preceding part of THE IRON AGE under the general heading of "Iron and Steel Markets" and "Non-ferrous Metals."

## Iron and Soft Steel Bars and Shapes

|                                       |        |
|---------------------------------------|--------|
| Bars:                                 |        |
| Refined iron bars, base price.....    | 3.54c. |
| Swedish charcoal iron bars, base..... | 7.50c. |
| Soft steel bars, base price.....      | 3.54c. |
| Hoops, base price.....                | 5.19c. |
| Bands, base price.....                | 4.39c. |
| Beams and channels, angles and tees   |        |
| 3 in. x ¼ in. and larger, base.....   | 3.64c. |
| Channels, angles and tees under 3 in. |        |
| x ¼ in., base.....                    | 3.54c. |

## Merchant Steel

|  |                  |
|--|------------------|
|  | Per Lb.          |
| Tire, 1½ x ½ in. and larger.....                 | 3.60c.           |
| (Smooth finish, 1 to 2½ x ¼ in. and larger)..... | 4.10c.           |
| Toe-calk, ½ x ¾ in. and larger.....              | 4.60c.           |
| Cold-rolled strip, soft and quarter hard.....    | 7.50c. to 8.50c. |
| Open-hearth, spring-steel.....                   | 5.00c. to 7.50c. |
| Shafting and Screw Stock:                        |                  |
| Rounds.....                                      | 4.65c.           |
| Squares, flats and hex.....                      | 5.15c.           |
| Standard tool steel, base price.....             | 15.00c.          |
| Extra tool steel.....                            | 18.00c.          |
| Special tool steel.....                          | 23.00c.          |
| High speed steel, 18 per cent tungsten.....      | 75c. to 80c.     |

## Tank Plates—Steel

|                        |        |
|------------------------|--------|
| ¾ in. and heavier..... | 3.64c. |
|------------------------|--------|

## Sheets

### Blue Annealed

|             |         |
|-------------|---------|
|             | Per Lb. |
| No. 10..... | 4.59c.  |
| No. 12..... | 4.64c.  |
| No. 14..... | 4.69c.  |
| No. 16..... | 4.79c.  |

### Box Annealed—Black

|                     |                  |             |
|---------------------|------------------|-------------|
|                     | Soft Steel       | Blued Stove |
|                     | C. R., One Pass  | Pipe Sheet  |
|                     | Per Lb.          | Per Lb.     |
| Nos. 18 to 20.....  | 4.45c. to 4.80c. |             |
| Nos. 22 and 24..... | 4.50c. to 4.85c. | 5.10c.      |
| No. 26.....         | 4.55c. to 4.90c. | 5.15c.      |
| No. 28.....         | 4.65c. to 5.00c. | 5.25c.      |
| No. 30.....         | 4.85c. to 5.20c. |             |

No. 28 and lighter, 36 in. wide, 10c. higher

### Galvanized

|                     |                  |
|---------------------|------------------|
|                     | Per Lb.          |
| No. 14.....         | 4.75c. to 5.10c. |
| No. 16.....         | 4.90c. to 5.25c. |
| Nos. 18 and 20..... | 5.05c. to 5.40c. |
| Nos. 22 and 24..... | 5.20c. to 5.45c. |
| No. 26.....         | 5.35c. to 5.70c. |
| No. 27.....         | 5.50c. to 5.85c. |
| No. 28.....         | 5.65c. to 6.00c. |
| No. 30.....         | 6.10c. to 6.50c. |

No. 28 and lighter, 36 in. wide, 20c. higher

## Welded Pipe

| Standard Steel   |       |       | Wrought Iron      |       |       |
|------------------|-------|-------|-------------------|-------|-------|
|                  | Black | Galv. |                   | Black | Galv. |
| ½ in. Butt....   | —41   | —24   | ½ in. Butt....    | —4    | +19   |
| ¾ in. Butt....   | —46   | —32   | ¾ in. Butt....    | —11   | +9    |
| 1-3 in. Butt.... | —48   | —34   | 1-1½ in. Butt.... | —14   | +6    |
| 2½-6 in. Lap.... | —44   | —30   | 2 in. Lap....     | —5    | +14   |
| 7-8 in. Lap....  | —41   | —11   | 2½-6 in. Lap....  | —9    | +9    |
| 9-12 in. Lap.... | —34   | —6    | 7-12 in. Lap....  | —3    | +16   |

## Steel Wire

|                           |         |
|---------------------------|---------|
|                           | Per Lb. |
| Bright basic.....         | 5.00c.  |
| Annealed soft.....        | 5.00c.  |
| Galvanized annealed.....  | 5.65c.  |
| Coppered basic.....       | 5.65c.  |
| Tinned soft Bessemer..... | 6.65c.  |

\*Regular extras for lighter gage.

## Brass Sheet, Rod, Tube and Wire

|                            |                |
|----------------------------|----------------|
|                            | BASE PRICE     |
| High brass sheet.....      | 19¼c. to 20¼c. |
| High brass wire.....       | 20¼c. to 21¼c. |
| Brass rods.....            | 18 c. to 19 c. |
| Brass tube, brazed.....    | 27¼c. to 28¼c. |
| Brass tube, seamless.....  | 25½c. to 26½c. |
| Copper tube, seamless..... | 27 c. to 28 c. |

## Copper Sheets

|   |
|---|
| Sheet copper, hot rolled, 23¼c. to 24¼c. per lb. base.                |
| Cold rolled, 14 oz. and heavier, 3c. per lb. advance over hot rolled. |

## Tin Plates

| Bright Tin  |           | Coke—14 x 20 |          | Prime  | Seconds |
|-------------|-----------|--------------|----------|--------|---------|
| Grade "AAA" | Grade "A" |              |          |        |         |
| Charcoal    | Charcoal  |              |          |        |         |
| 14x20       | 14x20     |              |          |        |         |
| IC..        | \$11.75   | \$10.50      | 80 lb..  | \$6.55 | \$6.30  |
| IX..        | 13.00     | 11.75        | 90 lb..  | 6.65   | 6.40    |
| IXX..       | 14.75     | 13.00        | 100 lb.. | 6.75   | 6.50    |
| IXXX..      | 16.50     | 14.75        | IC..     | 7.00   | 6.75    |
| IXXXX..     | 18.50     | 16.50        | IX..     | 8.25   | 8.00    |
|             |           |              | IXX..    | 9.50   | 9.25    |
|             |           |              | IXXX..   | 10.75  | 10.50   |
|             |           |              | IXXXX..  | 12.00  | 10.75   |

## Terne Plates

|                      |                        |
|----------------------|------------------------|
|                      | 8 lb. coating, 14 x 20 |
| 100 lb. ....         | \$7.00 to \$8.00       |
| IC.....              | 7.25 to 8.25           |
| IX.....              | 8.25 to 8.75           |
| Fire door stock..... | 9.00 to 10.00          |

## Tin

|                  |              |
|------------------|--------------|
| Straits pig..... | 41c.         |
| Bar.....         | 48c. to 53c. |

## Copper

|                   |       |
|-------------------|-------|
| Lake ingot.....   | 17½c. |
| Electrolytic..... | 17 c. |
| Casting.....      | 16¾c. |

## Spelter and Sheet Zinc

|                                    |                  |
|------------------------------------|------------------|
| Western spelter.....               | 7½c.             |
| Sheet zinc, No. 9 base, casks..... | 10¼c. open 10¼c. |

## Lead and Solder\*

|                                 |              |
|---------------------------------|--------------|
| American pig lead.....          | 8c. to 8¼c.  |
| Bar lead.....                   | 11c. to 12c. |
| Solder, ½ and ½ guaranteed..... | 29c.         |
| No. 1 solder.....               | 27c.         |
| Refined solder.....             | 23c.         |

\*Prices of solder indicated by private brand vary according to composition.

## Babbitt Metal

|                               |              |
|-------------------------------|--------------|
| Best grade, per lb.....       | 75c. to 90c. |
| Commercial grade, per lb..... | 35c. to 50c. |
| Grade D, per lb.....          | 25c. to 35c. |

## Antimony

|              |              |
|--------------|--------------|
| Asiatic..... | 8¼c. to 9¼c. |
|--------------|--------------|

## Aluminum

|  |              |
|--|--------------|
| No. 1 aluminum (guaranteed over 99 per cent pure), in ingots for remelting, per lb.... | 32c. to 33c. |
|--|--------------|

## Old Metals

The market is still weak and values are lower. Dealers' buying prices are nominally as follows:

|  | Cents Per Lb. |
|--|---------------|
| Copper, heavy crucible.....                  | 12.25         |
| Copper, heavy wire.....                      | 11.50         |
| Copper, light bottoms.....                   | 9.75          |
| Brass, heavy.....                            | 6.25          |
| Brass, light.....                            | 5.00          |
| Heavy machine composition.....               | 9.25          |
| No. 1 yellow brass turnings.....             | 6.50          |
| No. 1 red brass or composition turnings..... | 8.00          |
| Lead, heavy.....                             | 5.50          |
| Lead, tea.....                               | 4.00          |
| Zinc.....                                    | 4.00          |



